

**APPENDIX 1. THE SCORES OF MID TERM TEST**

<b>NO</b>	<b>Class XI IA 1</b>	<b>Class XI IA 3</b>	<b>Class XI IA 6</b>
1	77	74	85
2	73	75	73
3	87	77	77
4	85	72	-
5	80	82	86
6	93	92	88
7	78	86	82
8	82	76	70
9	79	70	81
10	70	75	70
11	87	70	88
12	78	76	85
13	77	86	83
14	88	91	83
15	76	90	90
16	70	86	77
17	93	70	77
18	80	83	86
19	78	76	92
20	57	59	87
21	72	73	81
22	72	77	85
23	89	79	86
24	88	73	70
25	85	88	90
26	72	87	80
27	91	80	85
28	85	76	79
29	66	86	88
30	67	84	79
31	88	83	88
32	75	80	80
33	93	89	89
34	76	82	89
35	79	77	54
36	64	90	83
37	78	83	96
38	80	91	90
39	79	78	92
40	96	86	-
<b>Total</b>	3183	3208	3144
<b>Mean</b>	79,58	80,2	82,74

**APPENDIX 2. THE STATISTICAL CALCULATION OF MID TERM TEST SCORES**

**Oneway**

**Descriptives**

MARK								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
XI IA 1	40	79.58	8.788	1.389	76.76	82.39	57	96
XI IA 3	40	80.20	7.328	1.159	77.86	82.54	59	92
XI IA 6	38	82.74	7.921	1.285	80.13	85.34	54	96
Total	118	80.81	8.083	.744	79.33	82.28	54	96

### APPENDIX 3. THE TEST OF HOMOGENEITY OF VARIANCES (THE MID TERM TEST SCORES)

#### Test of Homogeneity of Variances

MARK

Levene Statistic	df1	df2	Sig.
.491	2	115	.613

The purpose of this analysis is to determine whether the variances of its population are different or not (Pratisto; 2004:51). The hypotheses proposed are:

- When  $H_0$  is accepted, it shows that the population has the same variances.
- When  $H_0$  is rejected, it shows that the population do not have the same variances.

The basic of decision making are:

- If the probability (sig.) is higher than 0.05,  $H_0$  is accepted.
- If the probability (sig.) is lower than 0.05,  $H_0$  is rejected.

The class analysed are XI IA 1, XI IA 3, and XI IA 6. The conclusion of the mean scores analysis is that  $H_a$  is accepted since the probability (0.613) is higher than 0.05. It shows that the students in each class are heterogeneous in their intelligences.

**APPENDIX 4. THE CALCULATION OF ANOVA FORMULA (THE MID TERM TEST SCORES)**

**ANOVA**

MARK

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	216.974	2	108.487	1.680	.191
Within Groups	7427.543	115	64.587		
Total	7644.517	117			

The purpose of this analysis is to test whether the populations have the same mean scores (Pratisto; 2004:51). The hypotheses proposed are:

- When  $H_0$  is accepted, it shows that the populations have the same mean scores.
- When  $H_0$  is rejected, it shows that the population do not have the same mean scores.

The basic of decision making are:

- If  $F < F_{table}$  or the probability (sig.)  $> 0.05$ ,  $H_0$  is accepted.
- If  $F > F_{table}$  or the probability (sig.)  $< 0.05$ ,  $H_0$  is rejected.
- $F_{table}$  at 5% level of significance is determined with:
  - degrees of freedom of numerator (df) =  $k-1 = 3-1 = 2$
  - degrees of denominator =  $n-k = 118-3 = 115$
  - where n: amount of sample, k: amount of category

The result of  $F_{table 0.05 (2; 115)}$  is 3.07.

The class analysed are XI IA 1, XI IA 3, and XI IA 6. The conclusion is that  $H_0$  is accepted since the F (1.680) is lower than the  $F_{table}$  (3.07) and the probability (0.191) is higher than 0.05. It shows that the mean scores of those classes are the same.

**APPENDIX 5A. THE LESSON PLAN FOR THE FIRST TREATMENT OF CONTROL GROUP**

**LESSON PLAN**

**(The 1<sup>st</sup> Treatment of Control Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 1)
Semester	: 2
Time Allocated	: 45 minutes

**A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “A New Home in the Stars”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

**B. Learning Materials** (See Students’ Worksheet)

**C. Method and Techniques**

- \* Grammar Translation Method → Translation Technique

**D. Teaching and Learning Activities/teacher’s notes** (See the following page)

**E. Assessment**

Students are asked to do the reading quiz individually.

**F. References:**

Beatty, Ken. 2004. Read and Think 2: A Reading Strategies Course. Hong Kong: Longman.

**Teaching and Learning Activities/teacher's notes**

Stages	Activities		Time
	Teacher	Students	Allotment
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		1. Students are asked to read the passage individually in silent.	About 10 minutes.
	After translating the passage, teacher gives the students chance to ask some question about the part of the passage they do not understand.	2. Students are asked to read and translate each sentence into Indonesian.	About 20 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	3. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

## **APPENDIX 5B. THE LESSON PLAN FOR THE SECOND TREATMENT OF CONTROL GROUP**

### **LESSON PLAN**

**(The 2<sup>nd</sup> Treatment of Control Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 1)
Semester	: 2
Time Allocated	: 45 minutes

#### **A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “Sputnik”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

#### **B. Learning Materials** (See Students’ Worksheet)

#### **C. Method and Techniques**

- \* Grammar Translation Method → Translation Technique

#### **D. Teaching and Learning Activities/teacher’s notes** (See the following page)

#### **E. Assessment**

Students are asked to do the reading quiz individually.

#### **F. References:**

Lukman, Emalia Irigiliati (et al.). 2004. Headlight 2: An extensive Exposure to English Learning for SMA Students. Jakarta: Erlangga.

**Teaching and Learning Activities/teacher's notes**

Stages	Activities		Time Allotment
	Teacher	Students	
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		4. Students are asked to read the passage individually and in silent.	About 10 minutes.
	After translating the passage, teacher gives the students chance to ask some question about the part of the passage they do not understand.	5. Students are asked to read and translate each sentence into Indonesian.	About 20 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	6. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

**APPENDIX 5C. THE LESSON PLAN FOR THE THRID TREATMENT OF CONTROL GROUP**

**LESSON PLAN**

**(The 3<sup>rd</sup> Treatment of Control Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 1)
Semester	: 2
Time Allocated	: 45 minutes

**A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “Life on Mars: Does It Exist?”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

**B. Learning Materials** (See Students’ Worksheet)

**C. Method and Techniques**

- \* Grammar Translation Method → Translation Technique

**D. Teaching and Learning Activities/teacher’s notes** (See the following page)

**E. Assessment**

Students are asked to do the reading quiz individually.

**F. References:**

Smith, Lorraine C and Nancy Nici Mare. 1990. Issues for Today: An Intermediate Reading Skills Text. Boston: Heinle and Heinle Publishers.

**Teaching and Learning Activities/teacher's notes**

Stages	Activities		Time Allotment
	Teacher	Students	
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		7. Students are asked to read the passage individually and in silent.	About 10 minutes.
	After translating the passage, teacher gives the students chance to ask some question about the part of the passage they do not understand.	8. Students are asked to read and translate each sentence into Indonesian.	About 20 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	9. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

**APPENDIX 6A. THE LESSON PLAN FOR THE FIRST TREATMENT OF  
EXPERIMENTAL GROUP**

**LESSON PLAN**

**(The 1<sup>st</sup> Treatment of Experimental Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 3)
Semester	: 2
Time Allocated	: 45 minutes

**A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “A New Home in the Stars”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

**B. Learning Materials** (See Students’ Worksheet)

**C. Method and Techniques**

- \* Cooperative Learning Method → M.U.R.D.E.R Technique

**D. Teaching and Learning Activities/teacher’s notes** (See the following page)

**E. Assessment**

Students are asked to do the reading quiz individually.

**F. References:**

Beatty, Ken. 2004. Read and Think 2: A Reading Strategies Course. Hong Kong: Longman.

### Teaching and Learning Activities/teacher's notes

Stages	Activities		Time Allotment
	Teacher	Students	
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		10. Students are asked to work in pair.	
		11. Students are asked to read the passage individually in silent.	About 10 minutes.
	<p>Teacher explains the M.U.R.D.E.R steps.</p> <p>Student A and B: read the passage paragraph by paragraph.</p> <p>Student A: Read for a while → close the passage → tell your friend the main idea, important information, and some difficult vocabularies.</p> <p>Student B: detect the errors or omissions → explain some difficult vocabularies to student A.</p> <p>Both students give opinion and additional examples or illustration of the paragraph.</p> <p>Teacher asks the students to exchange their roles in pair.</p>	12. Students are asked to find the main idea and important information in each paragraph by following the steps ordered.	About 15 minutes.
	Having finished reading, teacher asks the students to give review of the passage.	13. Students are asked to make a short summary of the reading passage they have read.	About 4 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	14. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

**APPENDIX 6B. THE LESSON PLAN FOR THE SECOND TREATMENT  
OF EXPERIMENTAL GROUP**

**LESSON PLAN**

**(The 2<sup>nd</sup> Treatment of Experimental Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 3)
Semester	: 2
Time Allocated	: 45 minutes

**A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “Sputnik”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

**B. Learning Materials** (See Students’ Worksheet)

**C. Method and Techniques**

- \* Cooperative Learning Method → M.U.R.D.E.R Technique

**D. Teaching and Learning Activities/teacher’s notes** (See the following page)

**E. Assessment**

Students are asked to do the reading quiz individually.

**F. References:**

Lukman, Emalia Irigiliati (et al.). 2004. Headlight 2: An extensive Exposure to English Learning for SMA Students. Jakarta: Erlangga.

### Teaching and Learning Activities/teacher's notes

Stages	Activities		Time Allotment
	Teacher	Students	
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		15. Students are asked to work in pair.	
		16. Students are asked to read the passage individually in silent.	About 10 minutes.
	Teacher explains the M.U.R.D.E.R steps. Student A and B: read the passage paragraph by paragraph. Student A: Read for a while → close the passage → tell your friend the main idea, important information, and some difficult vocabularies. Student B: detect the errors or omissions → explain some difficult vocabularies to student A. Both students give opinion and additional examples or illustration of the paragraph. Teacher asks the students to exchange their roles in pair.	17. Students are asked to find the main idea and important information in each paragraph by following the steps ordered.	About 15 minutes.
	Having finished reading, teacher asks the students to give review of the passage.	18. Students are asked to make a short summary of the reading passage they have read.	About 4 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	19. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

**APPENDIX 6C. THE LESSON PLAN FOR THE THIRD TREATMENT OF  
EXPERIMENTAL GROUP**

**LESSON PLAN**

**(The 3<sup>rd</sup> Treatment of Experimental Group)**

Subject	: English
Skill	: Reading
Theme/Topic	: Space / Space Exploration
Class	: Senior High School / Second Year (XI IA 3)
Semester	: 2
Time Allocated	: 45 minutes

**A. Competence**

1. Basic Competence:

Students are able to comprehend the reading passage entitled “Life on Mars: Does It Exist?”.

2. Achievement Indicators:

Students are able to:

- \* answer factual, inference and main idea questions based on the reading passage.

**B. Learning Materials** (See Students’ Worksheet)

**C. Method and Techniques**

- \* Cooperative Learning Method → M.U.R.D.E.R Technique

**D. Teaching and Learning Activities/teacher’s notes** (See the following page)

**E. Assessment**

Students are asked to do the reading quiz individually.

**F. References:**

Smith, Lorraine C and Nancy Nici Mare.1990. Issues for Today: An Intermediate Reading Skills Text. Boston: Heinle and Heinle Publishers.

### Teaching and Learning Activities/teacher's notes

Stages	Activities		Time Allotment
	Teacher	Students	
Pre-Instructional Activities	Teacher greets the students and explains about what topic they will learn.	Introduction	About 1 minute.
Whilst-Instructional Activities		20. Students are asked to work in pair.	
		21. Students are asked to read the passage individually in silent.	About 10 minutes.
	Teacher explains the M.U.R.D.E.R steps. Student A and B: read the passage paragraph by paragraph. Student A: Read for a while → close the passage → tell your friend the main idea, important information, and some difficult vocabularies. Student B: detect the errors or omissions → explain some difficult vocabularies to student A. Both students give opinion and additional examples or illustration of the paragraph. Teacher asks the students to exchange their roles in pair.	22. Students are asked to find the main idea and important information in each paragraph by following the steps ordered.	About 15 minutes.
	Having finished reading, teacher asks the students to give review of the passage.	23. Students are asked to make a short summary of the reading passage they have read.	About 4 minutes.
	After answering questions, teacher discusses the passage or the correct answer to the whole class.	24. Students are asked to answer questions.	About 10 minutes.
Post-Instructional Activities		Students are asked to do the quiz individually.	About 5 minutes

**APPENDIX 7A. THE STUDENTS' WORKSHEET, READING QUIZ AND ANSWER KEY OF THE FIRST TREATMENT**

**STUDENTS' WORKSHEET**  
**A New Home in the Stars**

43 Pine Crescent  
Hong Kong

November 18, 2005

Ms. Anna Chan  
Editor Asia Times  
554 Queen's Road  
Hong Kong

Dear Ms. Chan,

I want to bring your readers attention to one of our city's finest features, the Museum of Science and Technology. When I was there recently, I saw two exhibits that made me realize what important issues are before us today.

The first exhibit I visited showed the history of evolution. In the exhibition, we can clearly see how, million of years ago, small creatures formed and with curiosity or courage, or both, left their homes in the sea and ventured onto land. From then, there were many steps over million of years, but these small and important steps eventually led to the creatures becoming people.

The second exhibition, on China's contribution to the exploration of space, showed a very similar story. In fact, today we are doing the same thing, but instead of leaving the oceans to crawl onto land, we are leaving the Earth and reaching for stars. Despite what anyone says, the money the government is spending on space exploration program is not a waste. Rather, it is a matter of survival for the human race. Space is our future.

There are several reasons why we should pay for space program. The first is that soon the population of Earth will be too great to feed itself. Another reason is that people are naturally curious. We want to know about our universe and tools like recently launched space telescope can help us learn more.

I urge everyone who has an interest in space exploration to visit the Museum of Science and Technology. The current exhibitions show both the history of human life and the future of space exploration, answering many questions about our place in the universe.

Yours sincerely,

Jodie Jensen

## QUESTION 1

**Answer the questions based on the text!**

1. Who writes the letter?
2. To whom does the writer want to send the letter?
3. How many exhibitions did Jodie go at the museum? What are they?
4. What is the main idea of paragraph 3?
5. What is the main idea of paragraph 4?
6. According to Jodie, why we should pay attention for space program?
7. Explain the history of evolution based on Jodie's story!
8. What does the word "itself" (paragraph 4, line 2) refer to?
9. What does Jodie suggest to the reader?

## READING QUIZ 1

Name/ Class/ No: \_\_\_\_\_

**Cross the right answer!**

1. What is Jodie's intention by writing a letter to Ms. Chan?
  - A. He asks Ms. Chan to go to the museum
  - B. He urges everyone to come to the museum.
  - C. He persuades everyone to go to the museum.
  - D. He does not like to go the museum.
  
2. What is the main idea of paragraph 3?
  - A. Jodie told about china's contribution to space exploration.
  - B. Jodie told about the importance of space exploration.
  - C. Jodie told about the survival of human race.
  - D. Jodie told about space exploration as our future.
  
3. What does paragraph 4 tell us about?
  - A. Jodie told about our curiosity of space exploration.
  - B. Jodie told about the importance of space exploration.
  - C. Jodie told about the earth huge population.
  - D. Jodie told about space exploration as our future.
  
4. According to Jodie, why we should pay attention for space program?
  - A. It is because soon the population of earth will be enormous.
  - B. It is because people will have difficulties in getting food.
  - C. It is because people can invent new tools to explore space.
  - D. It is because curiosity is the nature of people.
  
5. Who is Ms. Chan?
  - A. Mother of Jodie
  - B. Friend of Jodie
  - C. Chief editor of Asian week
  - D. editor of Asia Times
  
6. Which word in the passage has this meaning: "wanting to know or learn about something"?
  - A. Curious
  - B. Current
  - C. venture
  - D. feature

## ANSWER KEY

The translation of the passage

### A New Home in the Stars

43 Pine Crescent  
Hong Kong

November 18, 2005

Ms. Anna Chan  
Editor Asia Times  
554 Queen's Road  
Hong Kong

Dear Ms. Chan,

Saya ingin menarik perhatian pembaca anda terhadap salah satu tempat terbaik dari kota kita, museum pengetahuan dan teknologi. Ketika saya berkunjung ke sana akhir-akhir ini, saya melihat dua pameran yang membuat saya menyadari betapa pentingnya masalah yang ada sebelum hari ini.

Pameran pertama yang saya kunjungi menunjukkan sejarah dari evolusi. Dalam pameran itu, kita dapat melihat dengan jelas bagaimana berjuta-juta tahun yang lalu, makhluk kecil terbentuk dan dengan keingintahuan atau keberanian, atau kedua-duanya, meninggalkan tempat tinggal mereka di lautan dan berkelana menuju daratan. Dari situ, ada banyak langkah selama jutaan tahun, tetapi langkah kecil dan penting ini telah menunjukkan terbentuknya manusia dari makhluk tersebut.

Pameran kedua, dalam kontribusi China terhadap penjelajahan luar angkasa, menunjukkan cerita yang hamper sama. Pada faktanya, sekarang kita melakukan hal yang sama, tetapi selain meninggalkan lautan menuju ke daratan, kita meninggalkan bumi dan pergi menuju ke bintang-bintang. Daripada apa yang orang katakan, uang yang dikeluarkan oleh pemerintah untuk program penjelajahan luar angkasa tidaklah sia-sia. Melainkan, hal ini merupakan masalah dari keberlangsungan hidup ras manusia. Luar angkasa adalah masa depan kita.

Ada beberapa alasan mengapa kita harus memperhatikan program luar angkasa. Alasan pertama adalah bahwa pada saatnya nanti populasi bumi akan sangat banyak untuk dapat memberi makan dirinya sendiri. Alasan lain adalah bahwa manusia secara alamiah mempunyai keingintahuan. Kita ingin tahu tentang alam semesta kita dan alat-alat seperti teleskop luar angkasa yang baru-baru ini ditemukan dapat membantu kita untuk belajar lebih banyak lagi.

Saya mengajal semua orang yang mempunyai ketertarikan pada penjelajahan luar angkasa untuk mendatangi museum pengetahuan dan teknologi. Pameran ini

menunjukkan sejarah kehidupan manusia dan juga masa depan dari penjelajahan luar angkasa yang menjawab pertanyaan tentang tempat kita di alam semesta ini.

Dengan hormat,

Jodie Jensen

**Answer Key of Question 1**

1. Jodie Jensen.
2. Ms. Anna Chan.
3. Two exhibitions; history of evolution and space exploration.
4. Jodie's story about the exhibition of space exploration.
5. The importance of space program.
6. First, the population of earth will be too great to feed itself. Second, people are naturally curious.
7. Small creature left ocean and crawled onto land. Over million years the small creature evolved into human.
8. The earth.
9. Jodie urges the reader to visit museum science and technology.

**Answer Key of Reading Quiz 1**

1. B
2. D
3. B
4. C
5. D
6. A

## **APPENDIX 7B. THE STUDENTS' WORKSHEET, READING QUIZ AND ANSWER KEY OF THE SECOND TREATMENT**

### **STUDENTS' WORKSHEET**

#### **Sputnik**

Sputnik is the name of the first of several artificial satellites launched by Soviet Union from 1957 to 1961. The goal of the Sputnik program included studying the earth's upper atmosphere, observing animal survival in space flight, and testing soviet rocket technology. The launch of the unmanned Sputnik 1 and of Sputnik 2, which carried a dog, spurred the United States to invest more money and resources into its young space program, initiating a race between the two nations to land a person on the moon.

The Sputnik program began on October 3, 1957, with the launch of Sputnik 1, which weighed 83 kg. The official name of the satellite was *Iskustvennyy Sputnik Zemli* (fellow world traveler of the earth). The launch vehicle was a test version of the Soviet intercontinental ballistic missile. Sputnik 2 was launched on November 3, 1957, and weighed 508 kg. It carried a female dog named Laika. On – board instruments showed that Laika survived in space for several days until her oxygen supply was exhausted.

After failing in its first attempt, the United States launched its own satellite, Explorer 1, on January 31, 1958. The satellites weighed only 14 kg, including its rocket motor. The Soviets responded by launching Sputnik 3, which weighed 1.3 metric tons, on May 15, 1958. The first three Sputnik satellites each carried instruments to measure the temperature and density of the earth's upper atmosphere, the electron density of the ionosphere, and the size and number of micrometeorites (tiny particle in space). In addition, Sputnik 3 carried the first space laboratory, a set of instruments that could transmit information about the environment outside the satellites. Solar energy was used for the first time by Sputnik 3 to power its instruments and transmitters.

From 1958 to 1959 the Soviet Union interrupted the Sputnik program to concentrate on the Luna series of vehicle that were sent toward the moon. The Sputnik program was resumed with Sputniks 5 through 10, which were launched from 1960 to 1961. Sputniks 5, 6, 9, and 10 all carried dogs, most of which reentered the earth atmosphere safely and were recovered. These satellites each weighed several thousand kilograms and became the model of the Vostok spacecraft, which would eventually carry the first human passenger, Yuri Alekseyevich Gagarin, into space in April 1961.

In addition to initiating the space race between the United States and the Soviet Union, the Sputnik series of spacecraft also had alarming military implications. The intercontinental ballistic missiles that were used to launch the Sputnik satellites were also capable of traveling from the Soviet Union to military targets in less than an hour – much less than several hours required for conventional bomber aircraft. President Dwight D. Eisenhower of the United States reacted to the space race by signing the National Aeronautics and Space Act of 1958, which created the National Aeronautics and Space Administration (NASA). He also established the Defense Advanced Research Projects Agency, a division of the U.S. Department of Defense.

## QUESTION 2

**Answer the questions based on the text!**

1. What does NASA stand for?
2. What is the goal of the Sputnik program?
3. What does the word “its” (paragraph 3, line 3) refer to?
4. What did Sputnik 5 carry?
5. What happened to Laika?
6. What does paragraph 3 tell us about?
7. What is the main idea of paragraph 5?
8. Why happened to the Sputnik program in 1958?
9. What is the military implication of the space race between U.S and soviet?

## READING QUIZ 2

Name/ Class/ No: \_\_\_\_\_

**Cross the right answer!**

1. What did Sputnik 5 carry?
  - A. Human
  - B. Dog
  - C. None
  - D. Human and dog
  
2. The Soviet Union stopped the sputnik program because they wanted to .....
  - A. send human into space
  - B. prepare for Sputnik 5
  - C. develop light spaceflight
  - D. concentrate on Luna Series vehicle
  
3. What is the main idea of paragraph 3?
  - A. the first launching of U.S satellite
  - B. the first space laboratory
  - C. the soviet respond toward America
  - D. the first solar energy used in satellites
  
4. What happened to Laika?
  - A. It survived in space for several days and died.
  - B. It survived until the spaceflight came back to earth.
  - C. It survived in space only for a few hours.
  - D. It did not survive when the spaceflight reach space.
  
5. What is the main idea of paragraph 5?
  - A. President Eisenhower created NASA
  - B. The Sputnik program is U.S military target
  - C. The Sputnik program had a military implication
  - D. The race between the United States and the Soviet
  
6. Which statement is NOT the objective of the Sputnik Program?
  - A. The Sputnik program studied the earth's upper atmosphere.
  - B. The Sputnik program sent human and animal into space.
  - C. The Sputnik program observed animal survival in space.
  - D. The Sputnik program tested Soviet rocket technology

## ANSWER KEY

The translation of the passage

### **Sputnik**

Sputnik adalah nama satelit buatan pertama dari beberapa satelit yang diluncurkan Uni Soviet dari tahun 1957 sampai 1961. Tujuan dari program Sputnik termasuk mempelajari atmosfer atas bumi, mengamati kelangsungan hidup binatang dalam pesawat luar angkasa, dan uji coba teknologi roket Soviet. Peluncuran dari Sputnik 1 yang tidak berawak dan Sputnik 2 yang membawa seekor anjing, mendorong Amerika untuk menginvestasikan lebih banyak uang dan kekayaan pada program luar angkasa yang masih dini, yang memulai perlombaan antar 2 negara untuk mendaratkan orang di bulan.

Program Sputnik dimulai pada 3 Oktober 1957 dengan diluncurkannya Sputnik 1, yang berbobot 83 kg. Nama resmi dari satelit itu adalah *Iskustvennyy Sputnik Zemli* (sahabat penjelajah dari bumi). Peluncuran kendaraan ini merupakan versi uji coba dari misil penjelajah antar benua kepunyaan Soviet. Sputnik 2 diluncurkan pada 3 November 1957 dengan berat 508 kg. Satelit ini membawa seekor anjing perempuan bernama Laika. Pada alat-alat di pesawat menunjukkan bahwa Laika bertahan di luar angkasa untuk beberapa hari sampai persediaan oksigennya habis.

Setelah gagal pada usaha pertamanya, Amerika meluncurkan satelitnya sendiri, Explorer 1, pada 31 Januari 1958. Satelit itu mempunyai berat hanya 14 kg, termasuk roket pendorongnya. Soviet merespon dengan meluncurkan Sputnik 3, yang berbobot 1.3 ton persegi, pada 15 May 1958. Ketiga satelit Sputnik yang pertama masing-masing membawa peralatan untuk mengukur suhu dan kepadatan dari atmosfer atas bumi, kepadatan elektron dari ionosfer, dan ukuran dan jumlah dari micrometeor (partikel kecil di luar angkasa). Sebagai tambahan, Sputnik 3 membawa laboratorium luar angkasa yang pertama, seperangkat peralatan yang dapat mengirim informasi tentang keadaan lingkungan di sekitar satelit. Energi matahari digunakan untuk pertama kalinya oleh Sputnik 3 untuk menghidupkan peralatan dan penghubungnya.

Dari 1958 sampai 1959 Uni Soviet menghentikan program Sputnik untuk berkonsentrasi pada kendaraan seri Luna yang dikirim ke bulan. Program Sputnik dilanjutkan dengan Sputniks 5 sampai 10, yang diluncurkan dari 1960 sampai 1961. Sputnik 5, 6, 9, dan 10 semuanya membawa anjing, yang kebanyakan memasuki atmosfer bumi dengan selamat dan pulih. Satelit-satelit ini masing-masing mempunyai berat beberapa ribu kilogram dan menjadi model dari pesawat Vostok, yang akhirnya membawa penumpang manusia pertama, Yuri Alekseyevich Gagarin, ke luar angkasa pada April 1961.

Sebagai tambahan dari dimulainya perlombaan luar angkasa antara Amerika dan Uni Soviet, seri pesawat Sputnik juga mempunyai dampak secara militer. Misil penjelajah antar benua yang digunakan untuk meluncurkan satelit Sputnik juga mampu untuk melintas dari Uni Soviet ke target militer dalam waktu kurang dari satu jam – lebih sedikit daripada beberapa jam yang diperlukan pesawat pembom konvensional. President Dwight D. Eisenhower dari Amerika bereaksi terhadap perlombaan luar angkasa ini dengan menandatangani National Aeronautics and Space Act di tahun 1958, yang membentuk National Aeronautics

and Space Administration (NASA). Beliau juga mendirikan Defense Advanced Research Projects Agency, divisi dari departemen pertahanan Amerika.

**Answer Key of Question 2**

1. National Aeronautics and Space Administration.
2. The goals of the Sputnik program are studying the earth's upper atmosphere, observing animal survival in space flight, and testing soviet rocket technology.
3. Explorer 1.
4. a dog.
5. Laika survived in space for several days until her oxygen supply was exhausted.
6. The respond of Soviet Union toward the launching of Explorer 1.
7. The Sputnik series of spacecraft also had military implications.
8. Sputnik program was stopped to concentrate on Luna Series of vehicle.
9. The intercontinental ballistic missiles used to launch the Sputnik satellites were also capable of traveling from the Soviet Union to military targets in less than an hour.

**Answer Key of Reading Quiz 2**

1. B
2. D
3. C
4. B
5. C
6. B

## **APPENDIX 7C. THE STUDENTS' WORKSHEET, READING QUIZ AND ANSWER KEY OF THE THIRD TREATMENT**

### **STUDENTS' WORKSHEET**

#### **Life on Mars: Does It Exist?**

In 1976, two American spacecraft landed on Mars in order to search for signs of life. The tests that the Viking landers performed had negative results. However, scientists still have questions about our close neighbor in space. They want to investigate further into the possibility of life on Mars.

A biologist at NASA (the National Aeronautics and Space Administration), Chris McKay, has suggested three theories about life on Mars. One possibility is that life never developed. A second possibility is that life arose during the first billion years but did not survive. The third is that life arose and simple organisms developed. When environmental conditions on Mars changed, life ended.

The two *Viking* landers, which functioned very well, performed four experiments. Three experiments tested for biological activity in the soil. Unfortunately, these tests did not lead to any definite result. The fourth experiment looked for any evidence of life, dead or alive, but found none.

Scientists are also dissatisfied with the *Viking* mission. The two sites where the spacecraft landed provided safe landing places, but they were not particularly interesting locations. Scientists believe there are other areas on Mars that are similar to specific places on Earth which support life. For example, an area in Antarctica, southern Victoria Land, which is not covered by ice, resembles an area on Mars. In its dry valleys, the temperature in southern Victoria Land, which averages below zero, yet biologist found simple life forms (microorganisms) in rocks and frozen lakes. Perhaps this is also true of places on Mars.

Scientists want another investigation of Mars. They want to search for fossils, the ancient remains of life. If life ever existed on Mars, future missions may find records of it under sand or in the ice. The Soviet Union is planning to send an unmanned spacecraft to Mars, perhaps in 1998. The Soviet Union intends to return samples of Mars to Earth.

Even if future missions discover no evidence of past or present life on Mars, the new missions may clarify our understanding of how life begins. Scientist will better understand the conditions that are necessary for the survival of life – on Earth or in the universe. They will look for the answers to other intriguing questions. How is the Earth different from Mars? How can we explain the development life here on our planet and not on Mars, our close neighbor? Are we alone in the universe?

### QUESTION 3

**Answer the questions based on the text!**

1. What does this passage talk about?
2. What does “the Viking landers” (paragraph 1, line 2) refer to?
3. What is the main idea of paragraph 2?
4. Describe the three theories about life on Mars!
5. What tests did the Viking landers perform on Mars? What were the results of these tests?
6. What is the main idea of paragraph 5?
7. What does paragraph 6 tell us about?
8. What do scientists want to look for on Mars in the future?
9. What will scientist do toward the failed attempt of the Viking landers?

## READING QUIZ 3

Name/ Class/ No: \_\_\_\_\_

**Cross the right answer!**

1. What does the red planet refer to?
  - A. Earth
  - B. the sun
  - C. Mars
  - D. Venus
  
2. What is the main idea of paragraph 2?
  - A. Chris McKay eliminated the three theories about life on Mars.
  - B. Chris McKay proposed three theories about life on Mars.
  - C. Changing of the environmental condition on Mars cause no life on Mars.
  - D. Life arose on Mars but did not survive well on Mars.
  
3. What do scientists want to look for in the future missions to Mars?
  - A. microorganisms
  - B. Fossils
  - C. ice
  - D. water
  
4. What is the main idea of paragraph 6?
  - A. The hope of scientist about sending an unmanned spacecraft.
  - B. The hope of scientist about remains of life on Mars.
  - C. The hope of scientist about future mission on Mars.
  - D. The hope of scientist about the fossils they're going to find.
  
5. Which statement is NOT true based on Chris McKay theories?
  - A. Life does not exist in Mars for ages.
  - B. Life arose and died of Mars' low temperature.
  - C. Life arose but did not survive well on Mars.
  - D. Life developed and died of environmental changing.
  
6. Which word in the above passage has this meaning: "without need of a person to operate it"?
  - A. remains
  - B. unmanned
  - C. landers
  - D. resemble

## ANSWER KEY

The translation of the passage

### **Life on Mars: Does It Exist?**

Pada tahun 1976, dua pesawat Amerika mendarat di Mars untuk mencari tanda-tanda kehidupan. Tes yang dilakukan oleh pendarat Viking menunjukkan hasil yang negatif. Bagaimanapun juga, peneliti masih mempunyai pertanyaan tentang tetangga dekat kita di luar angkasa. Mereka ingin menyelidiki lebih lanjut kemungkinan adanya kehidupan di Mars.

Seorang ahli biologi di NASA (the National Aeronautics and Space Administration), Chris McKay, telah menyarankan tiga teori tentang kehidupan di Mars. Kemungkinan pertama adalah bahwa kehidupan tidak pernah berkembang. Kemungkinan kedua adalah bahwa kehidupan muncul selama jutaan tahun pertama tetapi tidak bertahan. Yang ketiga adalah bahwa kehidupan muncul dan organisme sederhana berkembang. Ketika kondisi lingkungan di Mars berubah, kehidupan berakhir.

Kedua pendarat Viking, yang berfungsi dengan baik, melakukan 4 percobaan. Tiga percobaan menguji aktivitas biologi di dalam tanah. Sayangnya, uji coba ini tidak menghasilkan hasil yang diharapkan. Percobaan keempat mencari bukti dari kehidupan, baik hidup maupun mati, tetapi tidak menemukan apa-apa.

Peneliti juga merasa kecewadengan misi Viking. Dua situs dimana pesawat tersebut mendarat menyediakan tempat pendaratan yang aman, tetapi tempat itu bukanlah lokasi yang menarik. Peneliti percaya bahwa ada beberapa area lain di Mars yang sama dengan tempat yang spesifik di bumi yang mendukung adanya kehidupan. Sebagai contoh, sebuah area di Antartika, bagian selatan daratan Victoria, yang tidak tertutup es, menyerupai area di Mars. Pada lembah keringnya, suhu di daratan Victoria bagian selatan, yang rata-rata berada di bawah nol, ahli biologi masih dapat menemukan bentuk sederhana dari kehidupan (mikro organisme) dalam batu dan danau-danau yang membeku. Kemungkinan hal ini juga benar terhadap tempat di Mars.

Peneliti menginginkan investigasi lainnya di Mars. Mereka ingin menemukan fosil, sisa-sisa kehidupan masa lalu. Jika kehidupan pernah ada di Mars, misi yang mendatang mungkin akan menemukan adanya laporan tentang fosil di bawah pasir atau di dalam es. Uni Soviet berencana untuk mengirim pesawat tidak berawak ke Mars, mungkin pada tahun 1998. Uni Soviet berniat untuk membawa kembali contoh dari Mars ke bumi.

Meskipun jika misi yang mendatang tidak menemukan adanya bukti dari kehidupan masa lalu dan sekarang di Mars, misi-misi baru mungkin akan menjelaskan pemahaman kita tentang bagaimana kehidupan dimulai. Peneliti akan mempunyai pemahaman mengenai kondisi di Mars yang penting untuk keberlangsungan kehidupan – di bumi maupun di alam semesta. Mereka akan mencari jawaban dari pertanyaan menarik lainnya. Bagaimana bumi berbeda dari Mars? Bagaimana kita dapat menjelaskan perkembangan kehidupan di planet kita dan tidak di Mars, tetangga dekat kita? Apakah kita sendirian di jagad raya ini?

**Answer Key of Question 3**

1. The Viking missions on Mars.
2. The name of the spacecraft.
3. Three theories of life on Mars.
4. One possibility is that life never developed. A second possibility is that life arose during the first billion years but did not survive. The third is that life arose and simple organisms developed but life ended because of the changing of the environmental conditions on Mars.
5. Three experiment for testing biological activity in the soil and one experiment for looking the evidence of life. The test found no result.
6. Scientists want to investigate Mars through future missions.
7. The optimism of the future missions to Mars.
8. Fossils.
9. Scientists will do another mission to mars.

**Answer Key of Reading Quiz 3**

1. C
2. B
3. B
4. C
5. B
6. B



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- C. It has 500km diameter.  
D. It has two distinctive colors.
5. “It will also learn .....” (Paragraph 2, line 3). What does the word ‘it’ refer to?  
A. Titan surface  
B. Saturn orbit  
C. Cassini  
D. Huygens
6. “With this mission, all of the mystery ..... Expected to be recovered.” (Paragraph 3, line7). What does the author mean from the sentence above?  
A. The mystery will be examined.  
B. The mystery has not been revealed.  
C. The scientists have revealed the mystery.  
D. The mystery makes the scientists confused.
7. Based on the passage above, what is the main idea of paragraph 3?  
A. the Huygens’ tasks  
B. the ‘martyr’ mission  
C. the Titan mission  
D. the Cassini’s tasks

**Text 2**

**Space Exploration**

<sup>1</sup>Since ancient times, people have dreamed of leaving their home planet and exploring other worlds. In the later half of the 20<sup>th</sup> century that dream become reality. It began with the launch of the first artificial satellites in 1957. A human first went into space in 1961. Since then, astronauts or cosmonauts have traveled into space for greater lengths of time. Two dozen people have circled the Moon or walked on its surface. At the same time, robotic explorers have journeyed where humans could not go. Unpiloted spacecraft have also visited moons, comets, and asteroids. These exploration have sparked the advanced of new technologies, from rockets to communications equipment to computers. Spacecraft studies have yielded a number of scientific discoveries about the solar system, the Milky Way Galaxy and the universe.

<sup>2</sup>On the moon on July 20, 1969, American astronaut Edwin “Buzz” Aldrin, Jr. became the second person to walk on the moon. Aldrin stepped onto the moon shortly after fellow Apollo 11 astronaut, Neil Armstrong. While millions of people on earth watched a televised broadcast of the event, Armstrong and Aldrin spent two hours exploring the lunar surface, gathering samples, taking photos, and setting up experiments.

<sup>3</sup>The first challenge of space exploration was developing rockets powerful and reliable enough to boost a satellite into orbit. These boosters required powerful engines and guidance systems to steer them on the proper flight paths to reach their desired orbits. The next challenge was building the satellites themselves. The satellites needed light electronic components. On earth, engineers also had to build tracking stations to maintain radio communications with these artificial “moons” as they circled the planet.

<sup>4</sup>It was inevitable that humans would follow their unpiloted creations into space. Piloted spaceflight introduced a whole new set of difficulties, many of

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them concerned with keeping people alive in the hostile environment of space. In addition to the vacuum of space, which requires any piloted spacecraft to carry its own atmosphere, there are other deadly hazards solar and cosmic radiation, and micrometeorites (small bits of rocks and dust). It was not only simply enough to keep people alive in space. It was necessary to develop tools and techniques for space navigation, and for conducting scientific observations and experiments. Astronauts would have to be protected when they traveled outside their pressurized spacecraft to work in the vacuum. Missions and hardware would have to be carefully designed to help ensure the safety of space crews from lift – off to landing.

<sup>5</sup>After the Apollo program, the emphasis in piloted missions shifted to long – duration spaceflight, as pioneered by Soviet and U.S. the development of reusable spacecraft became another goal. Today, efforts focus on keeping people healthy during space missions lasting a year or more – the duration needed to reach nearby planets – and in lowering the cost of sending satellites into orbit.

Taken from:  
Headlight 2: An extensive Exposure to English Learning for SMA Students.  
(Lukman; 2003:130)

**Answer no 8 – 14 based on the text 2!**

8. When did the first human go to the moon?
- |            |            |
|------------|------------|
| A. in 1957 | C. in 1961 |
| B. in 1969 | D. in 1967 |
9. After Apollo program, what things did scientists concentrate on? EXCEPT.....
- A. reusable spacecraft development
  - B. short – duration spaceflight
  - C. long – duration spaceflight
  - D. lowering the cost of spacecraft
10. Which word in the above passage has this meaning: “The act of traveling through a place in order to find about it or look for something in it”?
- |                |                |
|----------------|----------------|
| A. exploration | C. observation |
| B. experiment  | D. equipment   |
11. Why must astronauts carry the Earth’s atmosphere? EXCEPT.....
- A. It is because people can not live in the space.
  - B. It is because people need air to breathe.
  - C. It is because air consists of oxygen and hydrogen.
  - D. It is because the space contains no air.
12. “It began with .....” (Paragraph 1, line 2). What does the word ‘it’ refer to?
- |                                 |                           |
|---------------------------------|---------------------------|
| A. that dream                   | C. exploring other worlds |
| B. the 20 <sup>th</sup> century | D. leaving home planet    |

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13. Based on the passage above, the third paragraph tells about .....
- A. the challenges in building the satellites.
  - B. the challenges in steering the spacecraft.
  - C. the challenges in space exploration.
  - D. the challenges in developing rockets.
14. Based on the passage above, what is the main idea of paragraph 4?
- A. The scientists found difficulties in developing piloted spaceflight.
  - B. The scientists found difficulties in keeping people alive in space.
  - C. The scientists found difficulties in making spacecraft shield.
  - D. The scientists found difficulties in developing space navigation.

**Text 3**

**Why Explore the Universe?**

November 23

Dear Francis,

<sup>1</sup>Last weekend, I went to see a couple of exhibitions at the Museum of Science and Technology. The first was about evolution.... You know, ugly fish crawling out of water and a few million years later they're all monkeys and then people. I know it's probably true, but the museum didn't explain it very well. It looked like you might walk along the beach tomorrow and see a fish turning into a monkey. I wish they had the some pictures of what people might look like in another couple of million years. Maybe we'll start looking like fish again.

<sup>2</sup>Then I went to the other exhibition. This one was about space. It was great but, afterward, I had some reservations. It starts with examples of how early societies looked at the night skies and imagined all sorts of gods and outlandish creatures. Chinese fireworks were examples of early rockets. The first telescopes were next. I always thought they were invented by Galileo, but that's not true. It turns that Galileo was just the first to use a telescope to study the moon and planets. There were lots of other important people, but I can't remember their names. The next big section was all about the rockets pioneers like Goddard and Von Braun. And then, finally, there was something on contemporary space exploration. This was all about men on the moon and different planned trips to Mars.

<sup>3</sup>One of the things that bothered me was the fact that so few women were involved. I also wondered why so much time is wasted exploring space when we're still ignorant about much of the earth. For example, most of our oceans haven't been properly explored.

I guess space exploration is just more exciting for scientists.

See you soon,

Emily

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Taken from:  
Read and Think 2: A Reading Strategies Course.  
(Beatty; 2004:31)

**Answer no 15 - 21 based on the text 3!**

15. Which of the following statements is **true** based on the above passage?
- A. Galileo pioneered fireworks.
  - B. Galileo imagined gods in the night skies.
  - C. Galileo explored contemporary space.
  - D. Galileo studied the moon and stars.
16. “.... some reservations.” (Paragraph 2, line 2). What is the synonym of the underlined word?
- A. booking
  - B. anxiety
  - C. doubts
  - D. curiosity
17. Which is **not** a reservation of Emily about her visit to the museum?
- A. There were few women represented in the exhibition.
  - B. Other places to explore are not as attractive as space.
  - C. We don’t know much about Earth, let alone space.
  - D. There was a lot of emphasis on rockets.
18. What can be inferred from the passage above?
- A. Emily’s visit to an exhibition
  - B. Emily’s visit to an art gallery
  - C. Emily’s visit to a planetarium
  - D. Emily’s visit to a laboratory
19. Which of the following statements is **not** true based on Emily’s thought about the exhibition?
- A. She thought that Galileo was just the first to use a telescope.
  - B. She thought that ugly fish could evolve into monkeys and then people.
  - C. She thought that the first telescopes were invented by Galileo.
  - D. She thought that contemporary space exploration was done by men.
20. Based on the passage above, what is the main idea of paragraph 2?
- A. Emily’s story about earth exhibition.
  - B. Emily’s story about rocket exhibition.
  - C. Emily’s story about evolution exhibition.
  - D. Emily’s story about space exhibition.

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**APPENDIX 8B. THE POSTTEST**

**Read the passage carefully and choose the right answer!**

**Text 1**

<sup>1</sup>The National Aeronautics and Space Administration (NASA) worked together with European Space Administration (ESA) had launched Cassini – Huygens in July 1997. Its work is to explore the second largest planet of solar system, Saturn, its rings, and satellites especially Titan. To reach there, Cassini – Huygens used a rocket named Centaur 4.

<sup>2</sup>Arriving the orbit of Saturn, Huygens, the cruiser will land on Titan and explore its surface and atmosphere. When Huygens works on the surface of Titan, Cassini orbits Saturn for four years. **It** will also learn Saturn atmosphere, magnetosphere and magnetic field. Cassini will also learn the other Saturn’s satellites, that is, Enceladus and Lapetus. Enceladus’ diameter is about 500 km, and almost entire of its surface is covered with ice. Lapetus’ diameter is about 1440 km, and has puzzled the scientists as it has two different colored ‘faces’; one part of its surface is heavy dark while the other is as white as snow.

<sup>3</sup>Huygens will land on the surface of Titan in the speed of 600 meter per second, and to slow down its speed it is helped by three parachutes. It will work there for about two and a half hours. It will collect data of the surface of Titan and send them to Cassini. Huygens’ work is recording the physical characteristic of this satellite particularly the atmospheric pressure, density and temperature, etc. After working, Huygens will be left on the surface of Titan as a ‘martyr’, means it will not return to the earth and be there as an unknown object, forever and ever, for all time. With this mission, all of the mystery of Saturn and its satellites are expected to be recovered.

Taken from:  
Linked to the World: English for Senior High School grade XI.  
(Soeprapto; 2005:147)

**Answer no 1 – 7 based on the text 1!**

1. This passage mainly talks about .....  
A. Cassini – Huygens mission  
B. the launching of Cassini - Huygens  
C. NASA mission  
D. the exploration of Saturn
  
2. Which statement is **NOT** true according to the text?  
A. Cassini’s mission is to explore Titan surface.  
B. Cassini’s mission is to learn Enceladus and Lapetus.  
C. Cassini’s mission is to orbit Saturn for 4 years.  
D. Cassini’s mission is to learn Saturn atmosphere.
  
3. Huygens will send information about ..... to Cassini.  
A. Lapetus atmosphere  
B. Enceladus surface  
C. the Titan surface  
D. Titan diameter

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4. What is the unique characteristic of Saturn's satellites, Lapetus?
  - A. It has 1440 km diameter.
  - B. Its surface is covered by ice.
  - C. The color of its surface is nearer black.
  - D. It has two distinctive colors.
  
5. "It will also learn ....." (Paragraph 2, line 3). What does the word 'it' refer to?
  - A. Titan surface
  - B. Saturn orbit
  - C. Cassini
  - D. Huygens
  
6. "With this mission, all of the mystery ..... expected to be recovered." (Paragraph 3, line7). What does the author mean from the sentence above?
  - A. The mystery will be examined.
  - B. The mystery has not been revealed.
  - C. The scientists have revealed the mystery.
  - D. The mystery makes the scientists confused.
  
7. Based on the passage above, what is the main idea of paragraph 3?
  - A. the description of the Huygens' tasks
  - B. the procedure of the 'martyr' mission
  - C. the procedure of the Titan mission
  - D. the Huygens' tasks in Saturn

**Text 2**

<sup>1</sup>Since ancient times, people have dreamed of leaving their home planet and exploring other worlds. In the later half of the 20<sup>th</sup> century that dream become reality. **It** began with the launch of the first artificial satellites in 1957. A human first went into space in 1961. Since then, astronauts or cosmonauts have traveled into space for greater lengths of time. Two dozen people have circled the Moon or walked on its surface. At the same time, robotic explorers have journeyed where humans could not go. Unpiloted spacecraft have also visited moons, comets, and asteroids. These exploration have sparked the advanced of new technologies, from rockets to communications equipment to computers. Spacecraft studies have yielded a number of scientific discoveries about the solar system, the Milky Way Galaxy and the universe.

<sup>2</sup>On the moon on July 20, 1969, American astronaut Edwin "Buzz" Aldrin, Jr. became the second person to walk on the moon. Aldrin stepped onto the moon shortly after fellow Apollo 11 astronaut, Neil Armstrong. While millions of people on earth watched a televised broadcast of the event, Armstrong and Aldrin spent two hours exploring the lunar surface, gathering samples, taking photos, and setting up experiments.

<sup>3</sup>The first challenge of space exploration was developing rockets powerful and reliable enough to boost a satellite into orbit. These boosters required powerful engines and guidance systems to steer them on the proper flight paths to reach their desired orbits. The next challenge was building the satellites themselves. The satellites needed light electronic components. On earth, engineers

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also had to build tracking stations to maintain radio communications with these artificial “moons” as they circled the planet.

<sup>4</sup>It was inevitable that humans would follow their unpiloted creations into space. Piloted spaceflight introduced a whole new set of difficulties, many of them concerned with keeping people alive in the hostile environment of space. In addition to the vacuum of space, which requires any piloted spacecraft to carry its own atmosphere, there are other deadly hazards solar and cosmic radiation, and micrometeorites (small bits of rocks and dust). It was not only simply enough to keep people alive in space. It was necessary to develop tools and techniques for space navigation, and for conducting scientific observations and experiments. Astronauts would have to be protected when they traveled outside their pressurized spacecraft to work in the vacuum. Missions and hardware would have to be carefully designed to help ensure the safety of space crews from lift – off to landing.

<sup>5</sup>After the Apollo program, the emphasis in piloted missions shifted to long – duration spaceflight, as pioneered by Soviet and U.S. the development of reusable spacecraft became another goal. Today, efforts focus on keeping people healthy during space missions lasting a year or more – the duration needed to reach nearby planets – and in lowering the cost of sending satellites into orbit.

Taken from:

Headlight 2: An extensive Exposure to English Learning for SMA Students.  
(Lukman; 2003:130)

**Answer no 8 - 14 based on the text 2!**

8. When did the first human go to the moon?
- |            |            |
|------------|------------|
| A. in 1957 | C. in 1961 |
| B. in 1969 | D. in 1967 |
9. After Apollo program, scientists concentrate on..... EXCEPT.....
- A. developing reusable spacecraft
  - B. sending more spaceflight
  - C. long – duration spaceflight
  - D. lowering the cost of spacecraft
10. Which word in the above passage has this meaning: “The act of traveling through a place in order to find about it or look for something in it”?
- |                |                        |
|----------------|------------------------|
| A. exploration | C. observation         |
| B. navigation  | D. hostile environment |
11. Which statement is **NOT** the reason why astronauts must carry its own atmosphere?
- A. It is because people can not live in the space.
  - B. It is because people need air to breathe.
  - C. It is because air consists of oxygen and hydrogen.
  - D. It is because the space contains no air.

**READING TEST**  
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12. “It began with .....A. the dream of people  
B. the half of the 20<sup>th</sup> century  
C. exploring other worlds  
D. leaving home planet
13. Based on the passage above, the third paragraph discusses about .....  
A. the challenges in building the satellites.  
B. the challenges in building tracking stations.  
C. the challenges in space exploration.  
D. the challenges in developing rockets.
14. Based on the passage above, what is the main idea of paragraph 4?  
A. The scientists found difficulties in developing piloted spaceflight.  
B. The scientists found difficulties in keeping people alive in space.  
C. The scientists found difficulties in making spacecraft shield.  
D. The scientists found difficulties in developing space navigation.

**Text 3**

**Why Explore the Universe?**

November 23

Dear Francis,

<sup>1</sup>Last weekend, I went to see a couple of exhibitions at the Museum of Science and Technology. The first was about evolution.... You know, ugly fish crawling out of water and a few million years later they’re all monkeys and then people. I know it’s probably true, but the museum didn’t explain it very well. It looked like you might walk along the beach tomorrow and see a fish turning into a monkey. I wish they had the some pictures of what people might look like in another couple of million years. Maybe we’ll start looking like fish again.

<sup>2</sup>Then I went to the other exhibition. This one was about space. It was great but, afterward, I had some reservations. It starts with examples of how early societies looked at the night skies and imagined all sorts of gods and outlandish creatures. Chinese fireworks were examples of early rockets. The first telescopes were next. I always thought they were invented by Galileo, but that’s not true. It turns that Galileo was just the first to use a telescope to study the moon and planets. There were lots of other important people, but I can’t remember their names. The next big section was all about the rockets pioneers like Goddard and Von Braun. And then, finally, there was something on contemporary space exploration. This was all about men on the moon and different planned trips to Mars.

<sup>3</sup>One of the things that bothered me was the fact that so few women were involved. I also wondered why so much time is wasted exploring space when we’re still ignorant about much of the earth. For example, most of our oceans haven’t been properly explored.

I guess space exploration is just more exciting for scientists.

**READING TEST**  
**NATURAL SCIENCE STUDENTS OF GRADE XI**  
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See you soon,

Emily

Taken from:  
Read and Think 2: A Reading Strategies Course.  
(Beatty; 2004:31)

**Answer no 15 - 21 based on the text 3!**

15. Which of the following statements is **TRUE** based on the above passage?
- A. Von Braun is Chinese rocket pioneer.
  - B. Chinese societies imagined gods in the night skies.
  - C. Galileo explored contemporary space.
  - D. Galileo studied the moon and stars.
16. Which statement is **NOT** the Emily's complain about her visit to the space exhibition?
- A. There were a small number of women represented in the exhibition.
  - B. Other places to explore are not as attractive as space.
  - C. Space exploration doesn't provide any results in a short time.
  - D. There was a lot of emphasis on rockets.
17. "...of gods and outlandish creatures." (Paragraph 2, line 3). What is the meaning of the underlined word?
- A. big and strong
  - B. small and sophisticated
  - C. strange and unusual
  - D. modern and futuristic
18. What can be inferred from Emily's letter?
- A. Emily felt disappointed with what has been displayed in the space exhibition.
  - B. Emily felt agreed with what has been displayed in the space exhibition.
  - C. Emily felt interested in what has been displayed in the space exhibition.
  - D. Emily felt confused about what has been displayed in the space exhibition.
19. Which statement is **NOT** true based on Emily's thought after the exhibition?
- A. She thought that Galileo was just the first to use a telescope.
  - B. She thought that ugly fish could evolve into monkeys and then people.
  - C. She thought that the first telescopes were invented by Galileo.
  - D. She thought that contemporary space exploration was done by men.
20. Based on the passage above, what is the main idea of paragraph 2?
- A. Emily told about contemporary space exploration.
  - B. Emily told about a big section of rockets pioneers.
  - C. Emily told about telescope inventors.
  - D. Emily told about space exhibition.

**APPENDIX 9. THE RELIABILITY OF XI IA 6 (THE TRY OUT TEST)**

x	f	d	d <sup>2</sup>	fd <sup>2</sup>	fx
19	1	6	36	36	19
18	3	5	25	75	54
16	1	3	9	9	16
15	1	2	4	4	15
14	6	1	1	6	84
13	7	0	0	0	91
12	1	1	1	1	12
11	6	2	4	24	66
10	3	3	9	27	30
9	3	4	16	48	27
8	2	5	25	50	16
	n = 34			$\sum fd^2 = 280$	$\sum fx = 430$

$$R = \frac{K}{K-1} \left[ 1 - \frac{M(K-M)}{K.V} \right]$$

$$M = \frac{\sum fx}{n} = \frac{430}{34} = 12,647$$

$$R = \frac{20}{20-1} \left[ 1 - \frac{12,647(20-12,647)}{20 \times 8,235} \right]$$

$$V = \frac{\sum fd^2}{n} = \frac{280}{34} = 8,235$$

$$R = 1,053 \cdot \left[ 1 - \frac{12,647 \times 7,353}{20 \times 8,235} \right]$$

$$R = 1,053 \cdot \left[ 1 - \frac{92,993}{164,7} \right]$$

$$R = 1,053 \cdot [1 - 0,565]$$

$$R = 1,053 \times 0,565$$

$$R = 0,59 = 0,6$$

$$r_{table} = 0,316$$

The test is reliable since its reliability (0.6) is higher than  $r_{table}$  (0,316).

**APPENDIX 10. THE LEVEL OF DIFFICULTY OF THE TRY OUT TEST**

NO	Difficulty Index		NO	Difficulty Index	
1.	$FV = \frac{14}{34} = 0.4118$	A	11.	$FV = \frac{22}{34} = 0.6471$	A
2.	$FV = \frac{27}{34} = 0.7941$	E	12.	$FV = \frac{25}{34} = 0.7353$	E
3.	$FV = \frac{32}{34} = 0.9412$	VE	13.	$FV = \frac{25}{34} = 0.7353$	E
4.	$FV = \frac{28}{34} = 0.8235$	E	14.	$FV = \frac{7}{34} = 0.2059$	D
5.	$FV = \frac{28}{34} = 0.8235$	E	15.	$FV = \frac{24}{34} = 0.7059$	E
6.	$FV = \frac{11}{34} = 0.3235$	A	16.	$FV = \frac{9}{34} = 0.2647$	D
7.	$FV = \frac{18}{34} = 0.5294$	A	17.	$FV = \frac{22}{34} = 0.6471$	A
8.	$FV = \frac{12}{34} = 0.3529$	A	18.	$FV = \frac{20}{34} = 0.5882$	A
9.	$FV = \frac{29}{34} = 0.8529$	E	19.	$FV = \frac{21}{34} = 0.6176$	A
10.	$FV = \frac{30}{34} = 0.8823$	VE	20.	$FV = \frac{28}{34} = 0.8235$	E

Average of difficulty index =  $12.7057/20 = 0.635285 = 0.64$

Index difficulty (FV)	Interpretation
.00 - .14	(VD) very difficult
.15 - .29	(D) difficult
.30 - .70	(A) acceptable
.71 - .85	(E) easy
.86 – 1.00	(VE) very easy

**APPENDIX 11. THE DISCRIMINATION POWER OF THE TRY OUT TEST**

NO	Discrimination Index		NO	Discrimination Index	
1.	$D = \frac{9-3}{10} = 0.6$	VE	11.	$D = \frac{9-4}{10} = 0.5$	VE
2.	$D = \frac{9-6}{10} = 0.3$	S	12.	$D = \frac{9-6}{10} = 0.3$	S
3.	$D = \frac{10-8}{10} = 0.2$	S	13.	$D = \frac{9-7}{10} = 0.2$	S
4.	$D = \frac{9-7}{10} = 0.2$	S	14.	$D = \frac{4-1}{10} = 0.3$	S
5.	$D = \frac{10-7}{10} = 0.3$	S	15.	$D = \frac{8-6}{10} = 0.2$	S
6.	$D = \frac{4-1}{10} = 0.3$	S	16.	$D = \frac{7-0}{10} = 0.7$	VE
7.	$D = \frac{6-3}{10} = 0.3$	S	17.	$D = \frac{8-5}{10} = 0.3$	S
8.	$D = \frac{8-2}{10} = 0.6$	VE	18.	$D = \frac{8-5}{10} = 0.3$	S
9.	$D = \frac{10-7}{10} = 0.3$	S	19.	$D = \frac{6-4}{10} = 0.2$	S
10.	$D = \frac{10-7}{10} = 0.3$	S	20.	$D = \frac{8-8}{10} = 0$	L

Discrimination Index (D)

-1.00 until +.19

+ .20 until +.39

+ .40 until +1.00

Interpretation

(L) low

(S) satisfactory

(VE) very effective

**APPENDIX 12. THE CALCULATION OF MEAN SCORES OF POSTTEST IN TOTAL QUESTION**

NO	GTM (XI IA 1)		CLM (XI IA 3)	
	A	A <sup>2</sup>	B	B <sup>2</sup>
1	55	3025	65	4225
2	60	3600	40	1600
3	75	5625	40	1600
4	85	7225	55	3025
5	50	2500	60	3600
6	75	5625	80	6400
7	75	5625	60	3600
8	75	5625	45	2025
9	55	3025	45	2025
10	75	5625	60	3600
11	65	4225	50	2500
12	65	4225	75	5625
13	65	4225	60	3600
14	70	4900	65	4225
15	70	4900	85	7225
16	50	2500	0	0
17	75	5625	55	3025
18	55	3025	55	3025
19	70	4900	50	2500
20	50	2500	0	0
21	60	3600	65	4225
22	65	4225	0	0
23	65	4225	75	5625
24	90	8100	70	4900
25	75	5625	70	4900
26	60	3600	75	5625
27	90	8100	50	2500
28	75	5625	80	6400
29	55	3025	60	3600
30	35	1225	60	3600
31	80	6400	80	6400
32	50	2500	50	2500
33	75	5625	50	2500

34	65	4225	50	2500
35	65	4225	50	2500
36	55	3025	60	3600
37	50	2500	55	3025
38	50	2500	75	5625
39	75	5625	55	3025
40	85	7225	50	2500
<b>Total</b>	<b>2635</b>	<b>179725</b>	<b>2225</b>	<b>138975</b>
<b>n</b>	<b>40</b>		<b>37</b>	
<b>Mean</b>	<b>65.875</b>		<b>60.1351</b>	
<b>s</b>	<b>12.55</b>		<b>11.988</b>	

The Hypotheses of the Mean Scores of Posttest in Total Question

1. The hypotheses are:

- Ho:  $\mu_A = \mu_B$ , means that there is no significant difference between the mean score of control group (A) and the mean score of experimental group (B)

- Ha:  $\mu_A > \mu_B$ , means that the mean score of posttest of control group (A) is greater than the mean score of posttest of experimental group (B)

2.  $t_{table}$  is (0.05, df), where  $df = n_A + n_B - 2$

$$= 40 + 37 - 2$$

$$= 75$$

$$t_{table} \text{ is } (0.05, 75) = 1.6655$$

3. Calculation for t-observation (to):

A: the control group (XI IA 1)

$$\bar{x}_A = \frac{\sum x}{n} = \frac{2635}{40} = 65.875$$

$$sA = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{157.548} = 12.55$$

B: The experimental group (XI IA 3)

$$\bar{x}B = \frac{\sum x}{n} = \frac{2225}{37} = 60.1351$$

$$sB = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{143.731} = 11.988$$

$$t_o = \frac{\bar{x}A - \bar{x}B}{\sqrt{\frac{(nA-1)s^2A + (nB-1)s^2B}{nA + nB - 2} \left( \frac{1}{nA} + \frac{1}{nB} \right)}} = 2.048$$

#### 4. Conclusion

t-observation ( $t_o = 2.048$ ) is higher than  $t_{table}$  (1.6655) so  $H_0$  is rejected.

Hence, the difference between the two groups is significant where grammar translation method through translation technique can improve students' reading achievement better than cooperative learning method through M.U.R.D.E.R technique.

**APPENDIX 13. THE CALCULATION OF MEAN SCORES OF POSTTEST IN FACTUAL QUESTION**

NO	GTM (XI IA 1)		CLM (XI IA 3)	
	A	A <sup>2</sup>	B	B <sup>2</sup>
1	20	400	20	400
2	25	625	15	225
3	25	625	15	225
4	35	1225	25	625
5	20	400	25	625
6	30	900	35	1225
7	25	625	20	400
8	30	900	25	625
9	30	900	10	100
10	30	900	30	900
11	20	400	20	400
12	20	400	25	625
13	25	625	25	625
14	25	625	25	625
15	25	625	30	900
16	25	625	0	0
17	30	900	15	225
18	25	625	20	400
19	30	900	15	225
20	25	625	0	0
21	25	625	15	225
22	25	625	0	0
23	20	400	30	900
24	30	900	25	625
25	30	900	30	900
26	25	625	30	900
27	30	900	30	900
28	35	1225	25	625
29	20	400	20	400
30	15	225	25	625
31	30	900	25	625
32	20	400	20	400
33	25	625	30	900

34	30	900	20	400
35	30	900	10	100
36	30	900	25	625
37	20	400	25	625
38	20	400	30	900
39	30	900	30	900
40	30	900	10	100
<b>Total</b>	<b>1040</b>	<b>27900</b>	<b>850</b>	<b>21050</b>
<b>n</b>	<b>40</b>		<b>37</b>	
<b>Mean</b>	<b>26</b>		<b>22.97</b>	
<b>s</b>	<b>4.696</b>		<b>6.50</b>	

The Hypotheses of the Mean Scores of Posttest in Factual Question

1. The hypotheses are:

- Ho:  $\mu_A = \mu_B$ , means that there is no significant difference between the mean score of control group (A) and the mean score of experimental group (B)

- Ha:  $\mu_A > \mu_B$ , means that the mean score of posttest of control group (A) is greater than the mean score of posttest of experimental group (B)

2.  $t_{table}$  is (0.05, df), where  $df = n_A + n_B - 2$

$$= 40 + 37 - 2$$

$$= 75$$

$$t_{table} \text{ is } (0.05, 75) = 1.6655$$

3. Calculation for t-observation (to):

A: the control group (XI IA 1)

$$\bar{x}_A = \frac{\sum x}{n} = \frac{1040}{40} = 26$$

$$sA = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{22.05} = 4.696$$

B: The experimental group (XI IA 3)

$$\bar{x}B = \frac{\sum x}{n} = \frac{850}{37} = 22.97$$

$$sB = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{42.30} = 6.50$$

$$t_o = \frac{\bar{x}A - \bar{x}B}{\sqrt{\frac{(nA-1)s^2A + (nB-1)s^2B}{nA + nB - 2} \left( \frac{1}{nA} + \frac{1}{nB} \right)}} = 2.356$$

#### 4. Conclusion

t-observation ( $t_o = 2.356$ ) is higher than  $t_{table}$  (1.6655) so  $H_0$  is rejected.

Hence, the difference between the two groups is significant where grammar translation method through translation technique can improve students' reading achievement better than cooperative learning method through M.U.R.D.E.R technique.

**APPENDIX 14. THE CALCULATION OF MEAN SCORES OF POSTTEST IN INFERENCE QUESTION**

NO	GTM (XI IA 1)		CLM (XI IA 3)	
	A	A <sup>2</sup>	B	B <sup>2</sup>
1	20	400	25	625
2	20	400	10	100
3	20	400	15	225
4	30	900	20	400
5	20	400	20	400
6	25	625	25	625
7	25	625	25	625
8	25	625	15	225
9	15	225	15	225
10	25	625	20	400
11	30	900	15	225
12	25	625	25	625
13	20	400	20	400
14	25	625	25	625
15	25	625	35	1225
16	5	25	0	0
17	25	625	20	400
18	25	625	15	225
19	25	625	15	225
20	10	100	0	0
21	15	225	20	400
22	20	400	0	0
23	20	400	25	625
24	30	900	20	400
25	25	625	20	400
26	15	225	15	225
27	30	900	10	100
28	25	625	25	625
29	20	400	25	625
30	15	225	25	625
31	25	625	30	900
32	15	225	10	100
33	30	900	15	225

34	20	400	15	225
35	25	625	25	625
36	15	225	25	625
37	30	900	15	225
38	20	400	30	900
39	30	900	10	100
40	30	900	15	225
<b>Total</b>	<b>895</b>	<b>21425</b>	<b>735</b>	<b>15975</b>
<b>n</b>	<b>40</b>		<b>37</b>	
<b>Mean</b>	<b>22.375</b>		<b>19.865</b>	
<b>s</b>	<b>5.99</b>		<b>6.179</b>	

The Hypotheses of the Mean Scores of Posttest in Inference Question

1. The hypotheses are:

- Ho:  $\mu_A = \mu_B$ , means that there is no significant difference between the mean score of control group (A) and the mean score of experimental group (B)

- Ha:  $\mu_A > \mu_B$ , means that the mean score of posttest of control group (A) is greater than the mean score of posttest of experimental group (B)

2.  $t_{table}$  is (0.05, df), where  $df = n_A + n_B - 2$

$$= 40 + 37 - 2$$

$$= 75$$

$$t_{table} \text{ is } (0.05, 75) = 1.6655$$

3. Calculation for t-observation (to):

A: the control group (XI IA 1)

$$\bar{x}_A = \frac{\sum x}{n} = \frac{895}{40} = 22.375$$

$$sA = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{35.88} = 5.99$$

B: The experimental group (XI IA 3)

$$\bar{x}B = \frac{\sum x}{n} = \frac{735}{37} = 19.865$$

$$sB = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{38.176} = 6.179$$

$$t_o = \frac{\bar{x}A - \bar{x}B}{\sqrt{\frac{(nA-1)s^2A + (nB-1)s^2B}{nA + nB - 2} \left( \frac{1}{nA} + \frac{1}{nB} \right)}} = 1.81$$

#### 4. Conclusion

t-observation ( $t_o = 1.81$ ) is higher than  $t_{table}$  (1.6655) so  $H_0$  is rejected.

Hence, the difference between the two groups is significant where grammar translation method through translation technique can improve students' reading achievement better than cooperative learning method through M.U.R.D.E.R technique.

**APPENDIX 15. THE CALCULATION OF MEAN SCORES OF POSTTEST IN MAIN IDEA QUESTION**

NO	GTM (XI IA 1)		CLM (XI IA 3)	
	A	A <sup>2</sup>	B	B <sup>2</sup>
1	15	225	20	400
2	15	225	15	225
3	30	900	10	100
4	20	400	10	100
5	10	100	15	225
6	20	400	25	625
7	25	625	15	225
8	20	400	5	25
9	15	225	15	225
10	20	400	15	225
11	15	225	15	225
12	20	400	25	625
13	20	400	15	225
14	20	400	15	225
15	20	400	20	400
16	15	225	0	0
17	20	400	20	400
18	10	100	20	400
19	15	225	15	225
20	15	225	0	0
21	20	400	30	900
22	20	400	0	0
23	25	625	20	400
24	30	900	25	625
25	20	400	20	400
26	20	400	30	900
27	30	900	20	400
28	20	400	30	900
29	20	400	20	400
30	10	100	10	100
31	25	625	25	625
32	15	225	25	625
33	20	400	5	25

34	15	225	15	225
35	10	100	15	225
36	15	225	10	100
37	5	25	20	400
38	15	225	20	400
39	15	225	20	400
40	25	625	25	625
<b>Total</b>	<b>735</b>	<b>14725</b>	<b>675</b>	<b>13775</b>
<b>n</b>	<b>40</b>		<b>37</b>	
<b>Mean</b>	<b>18.375</b>		<b>18.24</b>	
<b>s</b>	<b>5.59</b>		<b>6.37</b>	

The Hypotheses of the Mean Scores of Posttest in Main Idea Question

1. The hypotheses are:

- Ho:  $\mu_A = \mu_B$ , means that there is no significant difference between the mean score of control group (A) and the mean score of experimental group (B)

- Ha:  $\mu_A > \mu_B$ , means that the mean score of posttest of control group (A) is greater than the mean score of posttest of experimental group (B)

2.  $t_{\text{table}}$  is (0.05, df), where  $df = n_A + n_B - 2$

$$= 40 + 37 - 2$$

$$= 75$$

$$t_{\text{table}} \text{ is } (0.05, 75) = 1.6655$$

3. Calculation for t-observation (to):

A: the control group (XI IA 1)

$$\bar{x}_A = \frac{\sum x}{n} = \frac{735}{40} = 18.375$$

$$sA = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{31.27} = 5.59$$

B: The experimental group (XI IA 3)

$$\bar{x}B = \frac{\sum x}{n} = \frac{675}{37} = 18.24$$

$$sB = \sqrt{\frac{n \cdot \sum x^2 - (\sum x)^2}{n \cdot (n-1)}} = \sqrt{40.58} = 6.37$$

$$t_o = \frac{\bar{x}A - \bar{x}B}{\sqrt{\frac{(nA-1)s^2A + (nB-1)s^2B}{nA + nB - 2} \left( \frac{1}{nA} + \frac{1}{nB} \right)}} = 0.1$$

#### 4. Conclusion

t-observation ( $t_o = 0.1$ ) is lower than  $t_{table}$  (1.6655) so  $H_o$  is accepted.

Hence, the difference between the two groups is not significant where grammar translation method through translation technique can improve students' reading achievement as well as cooperative learning method through M.U.R.D.E.R technique.