SUBJECT: MATHS

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- ✓ 6.1. Data collection (p.126-132)
- ✓ 6.2. Sampling (p.132-136)

Unit 9. Sequences and functions
- ✓ 9.1. Generating sequences (p.198-204)
- ✓ 9.2. Finding rules for sequences (p.205-210)
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- ✓ 9.4. Representing simple functions (p.216-222)

Unit 10. Percentages
- ✓ 10.1. Percentage increases and decreases (p.224-229)
- ✓ 10.2. Using a multiplier (p.230-233)

Unit 11. Graphs
- ✓ 11.1. Functions (p.235-239)
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- ✓ 11.3. Gradient and intercept (p.246-250)
- ✓ 11.4. Interpreting graphs (p.251-254)

<u>**Instructions:**</u>
1) **Students MUST complete the study guide before revision classes.**
2) **Students are NOT ALLOWED to use calculators for problem-solving tasks.**

PART 1. MATHEMATICAL TERMS

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
1	**population**	6.2		
2	**generate**	9.1		
3	**position number**	9.2		
4	**position-to-term rule**	9.2		
5	**sequence of patterns**	9.2		
6	**nth term**	9.3		
7	**algebraically**	9.4		
8	**function**	9.4		
9	**function machine**	9.4		

10	input	9.4		
11	inverse function	9.4		
12	map	9.4		
13	mapping diagram	9.4		
14	one-step function	9.4		
15	output	9.4		
16	two-step function	9.4		
17	absolute change	10.1		
18	percentage decrease	10.1		
19	percentage increase	10.1		
20	multiplier	10.2		
21	plot (a graph)	11.2		
22	coefficient	11.3		
23	equation of a line	11.3		
24	gradient	11.3		
25	linear function	11.3		
26	x-intercept	11.3		
27	y-intercept	11.3		

PART 2. EXERCISES

Question 1

Alana is going to visit the cinema with 10 of her friends.

She wants to collect data to decide which film they should see.

How should she collect her data?

a. Ask all of her friends

b. Ask one of her friends

c. Ask half of her friends

Question 2

Nasima collects data to find out about the benefits of living near the centre of her town.

How many people should Nasima ask?

a. One person who lives near her

b. Her family and friends

c. Twenty people who live in the town

d. Everyone who lives in her town

Question 3

There are 12 bags of apples in a box. You want to record the number of apples in each bag. Should you take a sample of the bags or count all the bags?

a. ○ Take a sample.

b. ○ Count all the bags.

Question 4

Sofia plans to collect data to find out about the benefits of living near a supermarket in her town.

She decides to ask a sample of people.

Which of these is a suitable sample?

a. 50 people who live in her town

b. 5 people who go to a particular supermarket

c. Someone who lives in each house within 100 m of a supermarket

Question 5

Marek wants to find out how much time learners in his school spend on their homework.

How could he take a sample?

a. Ask all learners in his class

b. Ask two learners in each class

c. Ask all the learners in his school

Question 6

Which method should be used to collect data about the colour of cars in a car park?

a. ○ Record observations
b. ○ Conduct a survey
c. ○ Complete a questionnaire
d. ○ Carry out an experiment

Question 7

Which method should you use to collect data about the favourite subject of learners in your school?

a. ○ Conduct an experiment
b. ○ Complete a questionnaire
c. ○ Record your observations

Question 8

Sofia plans to collect data to find out about the benefits of living near a supermarket in her town.
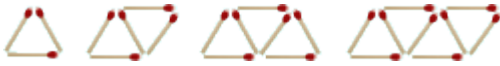
What is the population for her survey?

a. Everyone who goes to a supermarket

b. Everyone who lives in her town

c. Everyone who lives within one kilometre of her home

Question 9

There are 12 000 houses in a town. A survey is to be conducted.

Should every house be asked, or should a sample be taken?

a. ○ Take a sample.
b. ○ Ask every house.

Question 10

The nth term linking the number of matches to the number of triangles is:

nth term $= 2n + 1$

Use this rule to find the number of matches needed to make 20 triangles.

Number of matches = [   ]

Question 11

What is the third term of the sequence with nth term $7n - 5$?

[   ]

Question 12

Enter the next term in this sequence.

25, 26.5, 28, 29.5, [   ]

Question 13

$$14, 13\frac{3}{5}, 13\frac{1}{5}, 12\frac{4}{5}, \ldots$$

Enter numbers to complete the term-to-term rule for this sequence.

subtract $\dfrac{\boxed{}}{\boxed{}}$

Question 14

The term-to-term rule of a sequence is

multiply by 3 and then subtract 4.

Enter numbers to complete the first three terms of this sequence.

3, [   ], [   ]

Question 15

A sequence starts 10, 17, 24, ... Fill in the missing number in the nth term rule.

7n + [   ]

Question 16

Fill in the missing number in the *n*th term rule for the sequence 2, 7, 12, …

[   ] *n* – 3

Question 17

A rectangular field has an area of 1.2 square kilometres. The farmer buys more land so that the area is increased by 55%.

What is the new area of the field?

[   ] km^2

Question 18

Anna is using only 39% of the 60 GB memory on her computer.

How much free memory is left?

[   ] GB

Question 19

Linh received 65 marks out of a possible 80 in a mathematics test. Erity sat the same test and her mark was 20% more than Linh's.

What was Erity's mark?

[   ]

Question 20

Tarek saves $651 each month. He decides to reduce the amount he saves by 90%.

How much money can Tarek now save per month?

$ [   ]

Question 21

A dam holds 700 000 ML of water. The amount of water reduces by 6%.

How much water does the dam now hold?

[   ] ML

Question 22

One year, a farmer has 30 000 sheep in his flock. In the next year, the farmer reduces his flock by 37%.

The number of sheep he has after the fall in numbers is:

[   ]

Question 23

The population of a town is 75 838.

10 years later, the population has decreases by 8%.

Calculate the new population of the town.

Give your answer to the nearest whole number.

[ ]

Question 24

The cost, $c, of hiring a taxi is $15 plus $2 per kilometre.

Enter numbers to complete the function for the cost of hiring a taxi for a distance of k kilometres.

$c =$ [ ] $k +$ [ ]
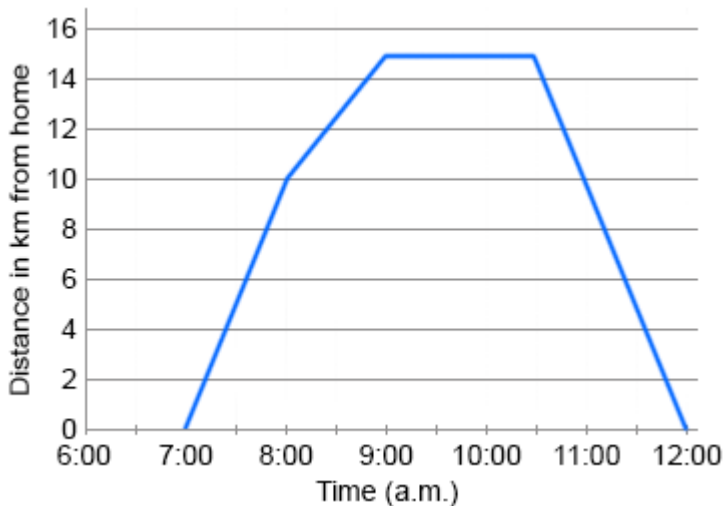

Question 25

A line has this table of values.

x	1	2	3	4
y	−4	3	10	17

Enter numbers to complete the equation of the line.

$y =$ [ ] $x −$ [ ]

Question 26

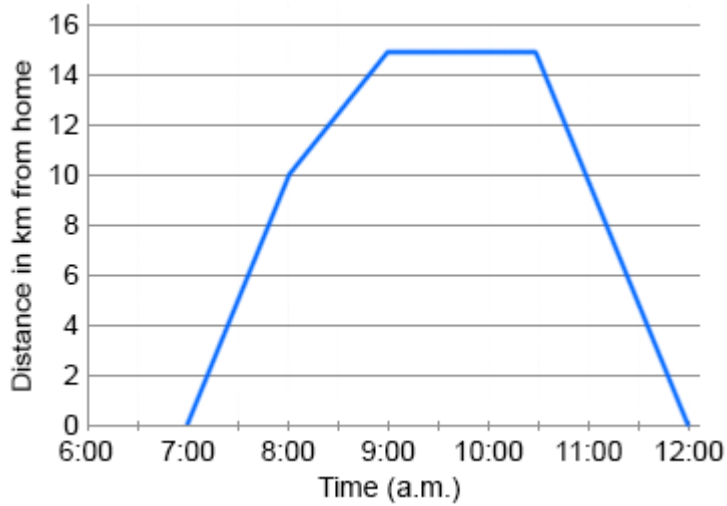The travel graph shows Ambia's cycle ride from home.

For how long did she stop?

[ ] hours [ ] minutes

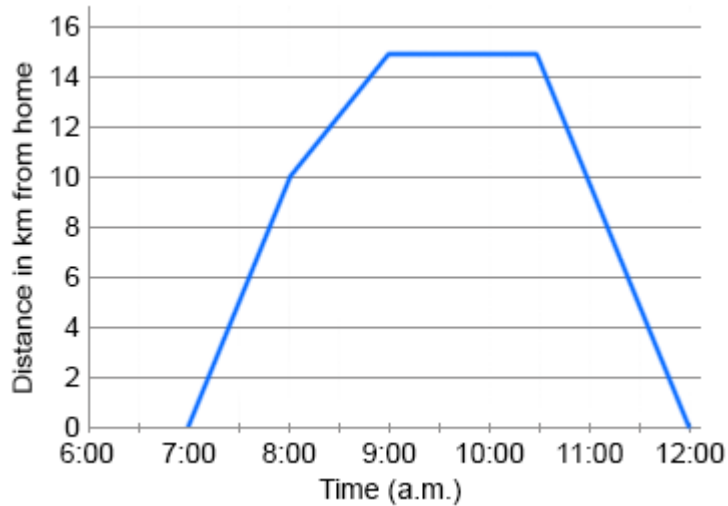## Question 27

The travel graph shows Ambia's cycle ride from home.

How far from home did she cycle?

[   ] km

Question 28

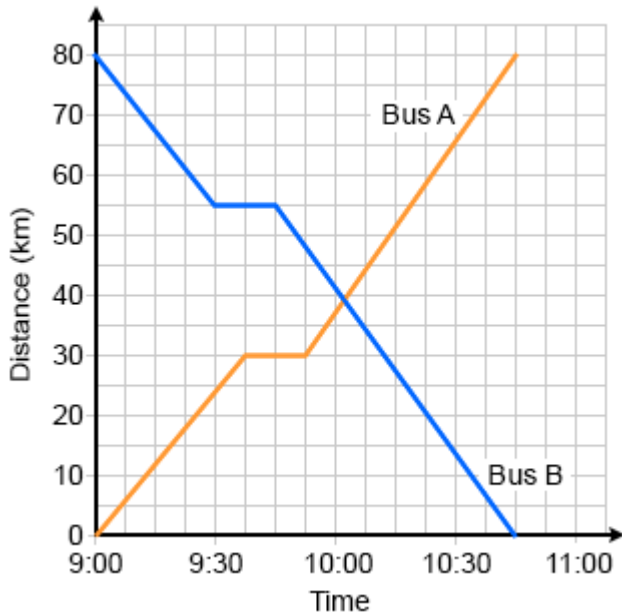The travel graph shows Ambia's cycle ride from home.

At what time did Ambia leave home?

[   ] : [   ]

Question 29

The graph shows the times that two buses took to travel 80 km along the same route. One bus was travelling away from the Bus Station and the other was travelling towards it.
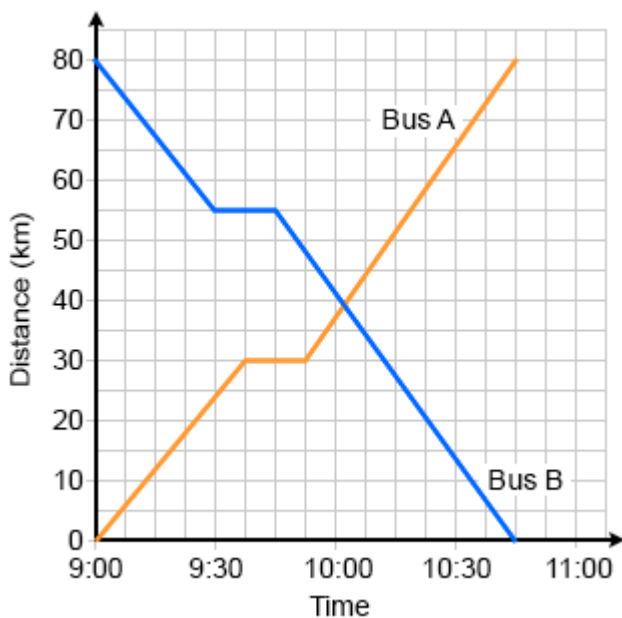

How long did each bus stop for?

[   ] minutes

Question 30

The graph shows the times that two buses took to travel 80 km along the same route. One bus was travelling away from the Bus Station and the other was travelling towards it.

How far from the Bus Station did the buses pass each other?

[   ] km