

SUBJECT: MATHS

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- ✓ 6.2. Sampling

Unit 9. Sequences and functions (p.198-223)

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- ✓ 9.3. Using the nth term
- ✓ 9.4. Representing simple functions

Unit 10. Percentages (p.224-234)

- ✓ 10.1. Percentage increases and decreases
- ✓ 10.2. Using a multiplier

Unit 11. Graphs (p.235-256)

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- ✓ 11.2. Plotting graphs
- ✓ 11.3. Gradient and intercept
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Unit 12. Ratio and proportion (p.257-274)

- ✓ 12.1. Simplifying ratios
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Unit 13. Probability (p.275-282)

- ✓ 13.1. Calculating probabilities

Instructions:

- 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	sampling	6		
3	position number	9		
4	position-to-term rule	9		
5	function	9		
6	inverse function	9		
7	percentage decrease	10		
8	percentage increase	10		
9	absolute change	10		
10	multiplier	10		
11	linear function	11		
12	coefficient	11		

NO.	TERMS	UNITS	DEFINITIONS	VIETNAMESE TRANSLATIONS
13	equation of a line	11		
14	gradient	11		
15	-x intercept	11		
16	-y intercept	11		
17	ratio	12		
18	simplify	12		
19	common factor	12		
20	profit	12		
21	proportion	12		
22	shades	12		
23	comparison	12		
24	probability	13.1		
25	complementary event	13.1		

PART 2. EXERCISES

1 A function is $y = 2x - 2$.

a Copy and complete this table of values.

x	-2	-1	0	1	2	3	4	5
$y = 2x - 2$	-6							8

b Use the table to **plot** a graph of $y = 2x - 2$.

2 Here is a function: $y = 3x + 4$

a Copy and complete this table of values.

x	-3	-2	-1	0	1	2	3
$y = 3x + 4$	-5			4			

b Use the table to draw a graph of $y = 3x + 4$.

3 Here is a function: $y = 5 - x$

a Copy and complete this table.

x	-2	-1	0	1	2	3	4	5	6
$y = 5 - x$	7			4				0	

b Use the table to draw a graph of $y = 5 - x$.

Question 4

If the probability of getting a six when I roll a fair six-sided dice is $\frac{1}{6}$, what is the probability that I don't get a six?

Question 5

The probability of the school football team losing their next match is 48%. What is the probability that they will not lose?

%

Question 6

Hans drew a counter out of a bag, recorded its colour and then replaced it. He did this 20 times and recorded the results.

Red	7
Blue	11
Yellow	2

From this data, what is the probability that the next counter will be red?

Give your answer as a **fraction** in its simplest form.

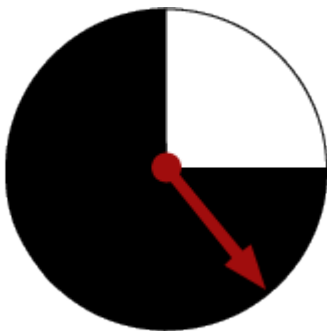
Question 7

The probability that Sachita is late for school is 0.7. What is the probability that Sachita is **not** late for school?

Question 8

What is the probability of the spinner not landing on black?

Give your answer as a fraction.



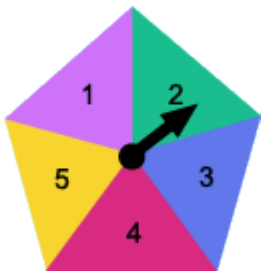
Question 9

Enzo's football team have played 25 matches this season. Their results are shown in this table.

	Win	Lose	Draw
Frequency	15	6	4

What is the probability that Enzo's football team will win their next match?

Give your answer as fraction in its simplest form.

Question 10

The probability of **not** getting an odd number on this spinner is:

Question 11

There are four blue cards, two red cards and one orange card. A card is picked at random. What is the probability of **not** picking a red card?

Give your answer as a fraction.

Question 12

Colour of fish	Frequency
Blue	22
Red	15
Silver	37
Black	46

In a large pond, a fish was caught and then released. The colour of the fish was recorded each time.

From this data, estimate the number of red fish if there are 40 fish in the pond.

Question 13

Number of matches	29	30	31	32
Number of boxes	18	62	14	6

A box of matches is supposed to contain 30 matches. However, this number varies slightly between boxes.

The table shows a survey of 100 boxes.

If one of these boxes were selected at random, what is the probability that it would contain exactly 30 matches?

Give your answer as a **percentage**.

%

Question 14

What is the next term in this sequence?

16.5, 16.6, 16.7, 16.8, 16.9,

Question 15

Enter the next term in this sequence.

25, 26.5, 28, 29.5,

Question 16

$4, 4\frac{2}{3}, 5\frac{1}{3}, 6, 6\frac{2}{3}, \dots$

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

add $\frac{\text{□}}{\text{□}}$

Question 17

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

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

subtract $\frac{\text{□}}{\text{□}}$

Question 18

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 19

What is the third term of the sequence with position-to-term rule $4n + 1$?

Question 20

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

 $n - 3$

Question 21

The ratio 3 : 18 is the same as 1 :

Question 22

Simplify the ratio 0.75 : 1.5.

 :

Question 23

The ratio 0.3 : 1.8 is the same as 3 :

Question 24

What is $\frac{1}{4} : 2$ as a simple ratio?

1 :

Question 25

In a class of 19 students, there are 8 boys and 11 girls. What is the ratio of girls to boys?

 :

Question 26

Simplify the ratio 560 : 70

 :

Question 27

Tan's height is 1 m 20 cm and Enrica's height is 1 m.

What is the simplified ratio of Tan's height to Enrica's height?

 :

Question 28

Simplify the ratio 2 kg : 250 g

 :

Question 29

Write the ratio 20 m : 1 km in its simplest form.

:

Question 30

Out of 25 students there are 14 who study French, 12 who study Italian and 3 students who do not study any language.

What is the ratio of the number of students studying two languages to those who only study one?

Write your answer as a simple ratio.

:

Question 31

On a school trip the teacher to learner ratio is 1 : 15.

If 165 learners are going on the excursion, how many teachers are needed?

Number of teachers =

Question 32

Jai and Li inherited a sum of money in the ratio 3 : 2. Li received \$800. How much was Jai's share?

\$

Question 33

The angles of this triangle are in the ratio 2 : 3 : 4.

What is the size of the largest angle?

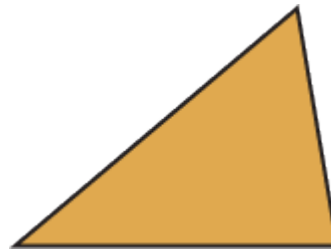
Sum of all angles = 180°

$2 + 3 + 4 = 9$ parts (from the ratio)

1 part = $180^\circ \div 9$

= 20°

Largest angle = $^\circ$



Question 34

A rope is cut in the ratio 5 : 7 : 3.

Total number of parts in the ratio =

Question 35

If Johan and Renee share \$90 in the ratio 7 : 3, how much money will Renee have?

\$

Question 36

The ratio of boys to girls at a tennis club is 9 : 7. There are 45 boys at the club. How many girls are there?

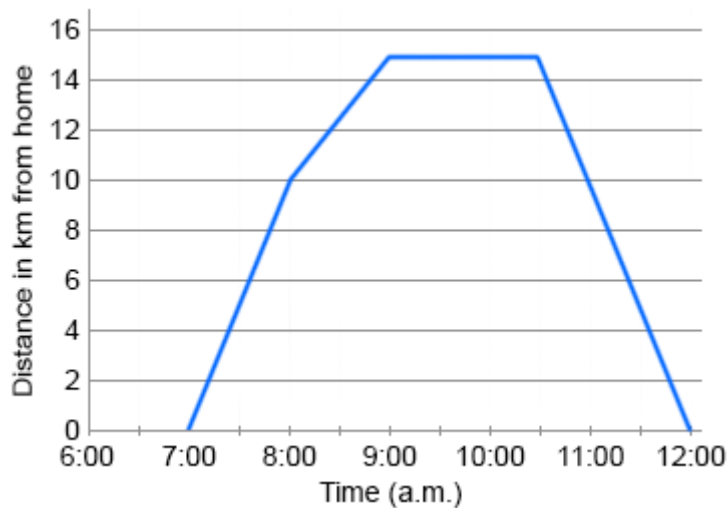
Question 37

A recipe uses 250 g of margarine to make 10 cakes. Rekhar wants to make 25 cakes. How much margarine does she need?

 g

Question 38

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

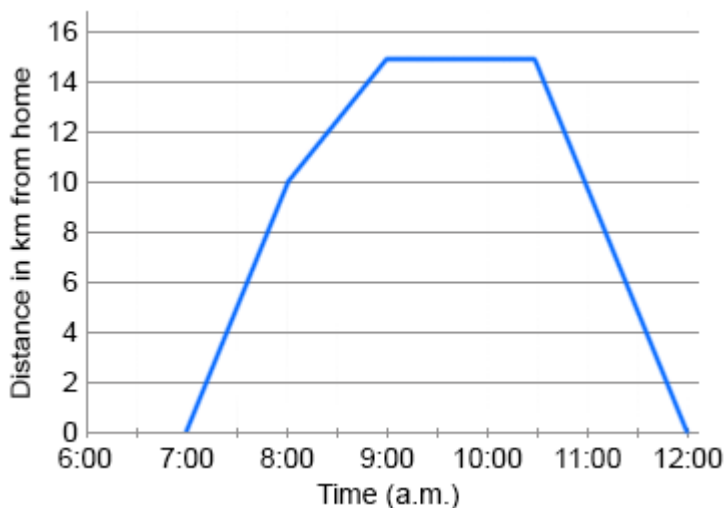


For how long did she stop?

 hours minutes

Question 39

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

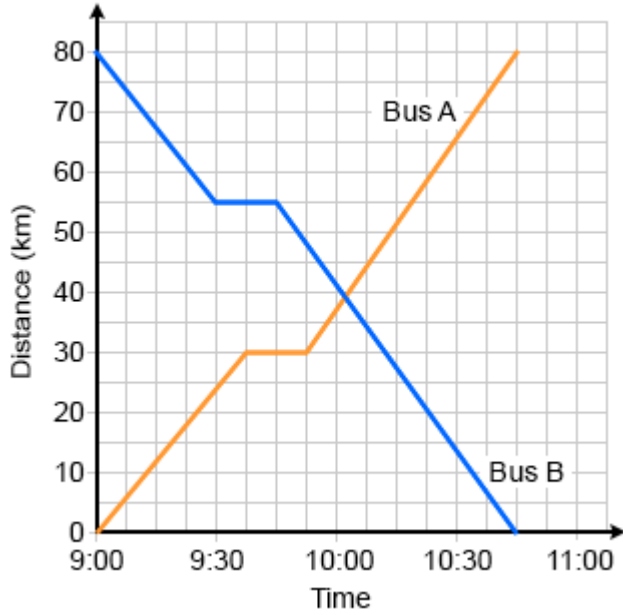


How far from home did she cycle?

 km

Question 40

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