

# YEAR 7 MATHEMATICS

EXAMINATION SEMESTER 1 2017

## QUESTION AND ANSWER BOOKLET



**KINROSS  
COLLEGE**

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**STUDENT NAME:**

**TEACHER:**

**DATE:**

### TIME ALLOWED FOR THIS PAPER

Reading time before commencing work: 10 minutes

Working time for this paper: 90 minutes

### **MATERIAL TO BE PROVIDED BY THE SUPERVISOR**

- This Question/Answer Booklet

### **MATERIAL TO BE PROVIDED BY THE CANDIDATE**

- Pen/pencil for answering questions.
- Erasing stationery.
- Up to two scientific calculators.
- Written notes on **one** unfolded A4 sized paper; can be double-sided.

**TOTAL QUESTIONS:**

**TOTAL MARKS: 65**

**Section 1:**

**NON-CALCULATOR**

**23 questions, 26 marks**

**Section 2:**

**CALCULATOR**

**26 questions, 39 marks**

### **AT THE END OF THE EXAMINATION**

Attach any extra sheets used to this Question/Answer booklet.

### **IMPORTANT NOTE TO CANDIDATES**

**No other items may be taken into the examination room.**

**It is your responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor BEFORE reading any further.**

Section 1: NON-CALCULATOR (Total 26 Marks)

1

(1)

What is the difference between 76 and 49?

27

17

125

23

2.

(1)

The place value of 9 in 4936 is:

9 hundreds

9 tens

9 thousands

90 thousands

3.

(1)

458 rounded to the nearest 100 is

500

600

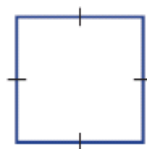
300

400

4.

(1)

A square has perimeter 20 mm. What is the area of the square?



$P = 20 \text{ mm}$

$12 \text{ mm}^2$

$16 \text{ mm}^2$

$25 \text{ mm}^2$

$30 \text{ mm}^2$

5.

(1)

Find the LCM of the following group of numbers. (2,3,4)

12

6

8

9

6.

(1)

$5 \times 5 \times 5 \times 5$  can be simplified to:

$4^5$

$5^4$

$5 \times 4$

54

7.

(1)

A bag of marbles contains 3 blue marbles, 2 green marbles and 5 red marbles. A marble is chosen at random. The probability that the marble selected is blue is:

0.2

0.3

0.4

0.6

8.

(1)

Which figure below has  $\frac{3}{10}$  shaded ?



9.

(1)

Each letter of the word BOOK is written separately on four cards. What is the chance of picking a card with the letter O if one card is picked at random?

0.25

0.5

0.6

1

10.

(1)

The highest common factor (HCF) of 24 and 32 is:

4

16

6

8

11.

(1)

Which of the following fractions are *not* equivalent to  $\frac{8}{6}$ ?

$\frac{4}{3}$

$\frac{12}{9}$

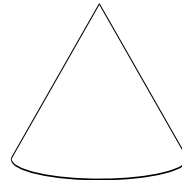
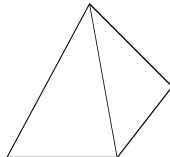
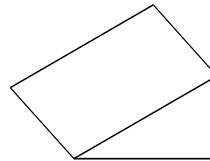
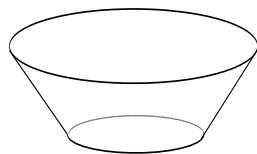
$\frac{18}{12}$

$1\frac{2}{6}$

12.

(1)

Which solid below is a prism?



13.

(1)

Which equation is correct?

$\frac{3}{10} + \frac{1}{5} = \frac{4}{15}$

$\frac{3}{10} + \frac{1}{5} = \frac{4}{50}$

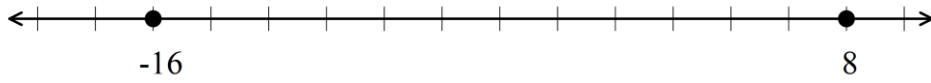
$\frac{3}{10} + \frac{1}{5} = \frac{4}{10}$

$\frac{3}{10} + \frac{1}{5} = \frac{1}{2}$

14.

(1)

What number is halfway between  $-16$  and  $8$  on the number line?



$-8$

$-4$

$0$

$4$

15.

(1)

$4 \times 1000 + 8 \times 100 + 3 \times 1$  is the expanded form of:

4083

483

4830

4803

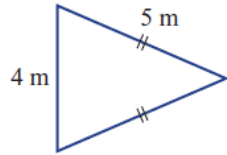
Short Answer Section Non-Calculator

16.

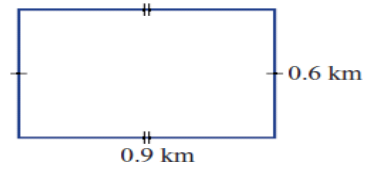
(2)

Find the perimeter of each of these shapes.

a



b

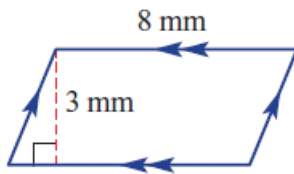


17.

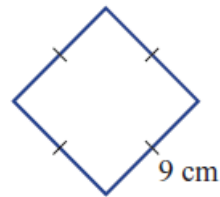
(2)

Find the area of each of these shapes.

a



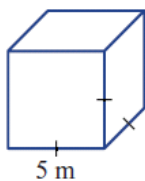
b



18.

(1)

Find the volume of the cube prisms.



19.

(1)

Phil hit 126 runs and Mario hit 19 runs. How many more runs did Phil hit compared to Mario?

20.

(2)

Fill in the empty boxes to make the following fraction sums correct.

a  $\frac{\square}{5} + \frac{1}{\square} = \frac{13}{20}$

b  $\frac{\square}{4} - \frac{\square}{3} = \frac{5}{12}$

21.

(1)

Lisa is 6 years older than Susan, Jessie is 5 years older than Lisa, and the total of their ages is 41. How old is Susan?

22.

(1)

What is the largest five-digit number you can write if each digit must be different and no digit may be prime?

23.

(1)

Jill is climbing up a steep and slippery path to fetch a bucket of water. When she is 6 m above her starting point, she slips back 1 m, grasps some bushes by the side of the path and climbs 7 m more to a at section. How far above her starting point is she when she reaches the resting place?

END OF THIS SECTION

Section 1: CALCULATOR (Total 39 Marks)

1.

(1)

A customer has to wait 8 days for a leaking pipe to be repaired. In 1 hour the pipe loses 4 litres of water. The amount of water that will be lost while the customer is waiting is approximately:

760L

770L

780L

790L

2.

(1)

The area of a square is  $9\text{cm}^2$ . If the length of each side is doubled, what is the area now?

$18\text{cm}^2$

$36\text{cm}^2$

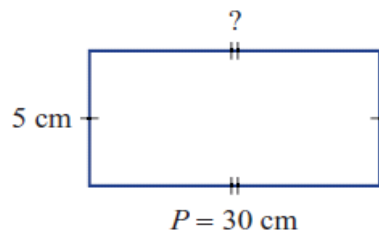
$81\text{cm}^2$

$324\text{cm}^2$

3.

(1)

A rectangle with width 5 cm has a perimeter of 30 cm. Its length is:



14 cm

16 cm

18 cm

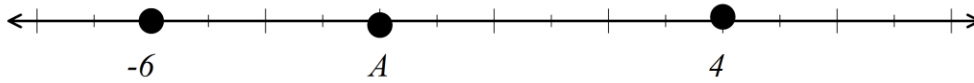
10 cm



4.

(1)

The numbers  $-6$  and  $4$  are marked on the number line below. What is the third number (labelled  $A$ ) which is marked on the number line?



$-4$

$0$

$-2$

$-1$

5.

(1)

Ten cards are numbered from 1 to 10, shuffled and placed face down on a table. If a card is selected at random, and the probability that the card selected is greater than 8

$0.20$

$0.30$

$0.50$

$0.90$

6.

(1)

The answer to  $[2 + 3 \cdot (7 - 4)] \div 11$  is?

$15$

$13$

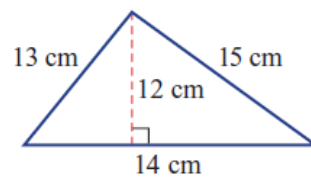
$3.65$

$1$

7.

(1)

The area of this triangle is:



$12 \text{ cm}^2$

$84 \text{ cm}^2$

$105 \text{ cm}^2$

$90 \text{ cm}^2$

8.

(1)

The remainder when 317 is divided by 9 is

2

6

3

9

9.

(1)

Which group of numbers contains every factor of 60?

- 2,3,4,5,10,12,15,60
- 2,3,4,5,10,12,15,20,30
- 1,2,3,4,5,10,12,15,20,30
- 1,2,3,4,5,6,10,12,15,20,30,60

10.

(1)

Each letter of the word APPLE is written separately on five cards. One card is then chosen at random. Pr (letter P) is:

0.2

0.4

0.5

1

11.

(1)

A fair 6-sided die is rolled 600 times. The expected number of times that the number rolled is either a 1 or a 2 is:

600

100

200

400

12.

(1)

Use order of operations to find the answers

$$(5+2) \times 3 - (8-7)$$

22

35

20

36

13.

(1)

Three friends share a pizza. Jake eats  $\frac{1}{5}$  of the pizza, Maddie eats  $\frac{1}{3}$  of the pizza and Robert eats the rest. What fraction of the pizza does Robert eat?

$$\frac{1}{4}$$

$$\frac{1}{5}$$

$$\frac{7}{15}$$

$$\frac{1}{15}$$

14.

(1)

$\frac{60}{14}$  can be written as ?

$$3\frac{5}{11}$$

$$\frac{15}{10}$$

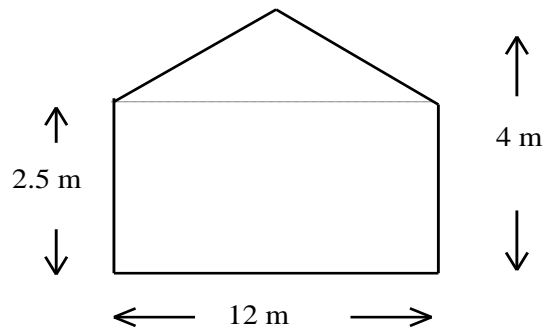
$$4\frac{2}{7}$$

$$7\frac{15}{30}$$

15.

(1)

The end of a building is in the shape shown. What is the area of the end of the building?



$$54 \text{ m}^2$$

$$66 \text{ m}^2$$

$$48 \text{ m}^2$$

$$39 \text{ m}^2$$

16.

(2)

Write the next three terms in each of the following sequences.

a 3, 6, 12, 24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b 65, 56, 47, 38, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

17.

(1)

Andrew's television has 25 channels programmed, four of which are high definition channels. He randomly flicks to a channel.

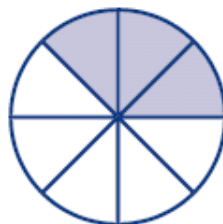
What is the probability that it is a high definition channel?

$$\frac{\square}{\square}$$

18.

(4)

Jenny shared a pizza with some friends. She ate the shaded slices.



- a What fraction of the pizza did Jenny eat? \_\_\_\_\_
- b What percentage of the pizza did Jenny eat? \_\_\_\_\_
- c What fraction of the pizza did her friends eat? \_\_\_\_\_
- d What percentage of the pizza did her friends eat? \_\_\_\_\_

19.

(3)

Place the correct mathematical symbol (<, = or >) in between the following pairs of fractions to make true mathematical statements.

a  $\frac{7}{9} \square \frac{2}{3}$

b  $\frac{4}{5} \square \frac{6}{7}$

c  $\frac{8}{12} \square \frac{12}{18}$

20.

(3)

Simplify the following:

a  $\frac{3}{5} + \frac{4}{5}$

b  $\frac{6}{7} - \frac{1}{3}$

c  $\frac{1}{2} + \frac{3}{8}$

21.

(2)

Use order of operations to answer these problems.

a  $3 + 4 \times 7$  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b  $5 + 2 \times (8 - 2) \div 4$  \_\_\_\_\_

22.

(2)

Write each of the following in *expanded form*, then evaluate.

(a)  $2^5$

(b)  $10^6$

23.

(2)

Write each of the following in *index form*.

(a)  $4 \times 4 \times 4$

(b)  $81 \times 81 \times 81 \times 81 \times 81$

24.

(1)

Re-write the numbers 20, -9, 0, -6 and -14 in ascending order.

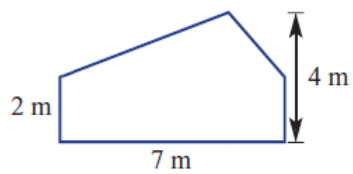
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25.

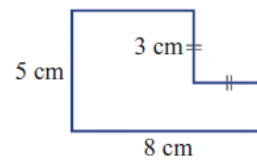
(2)

Find the area of each of these composite shapes.

a



b

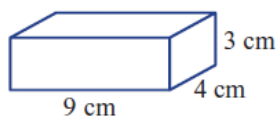


26.

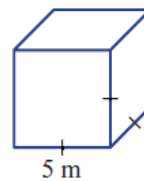
(2)

Find the volume of these rectangular prisms.

a



b



**END OF EXAMINATION**