

YEAR 7 MATHEMATICS

EXAMINATION - SEMESTER 2, 2015

QUESTION AND ANSWER BOOKLET

STUDENT'S NAME:
TEACHER'S NAME:
DATE:



**KINROSS
COLLEGE**
Believe · Act · Achieve

TIME ALLOWED FOR THIS PAPER:

Reading time **before** commencing work: 10 minutes
Working time for this paper: 1 hour & 30 minutes

MATERIAL REQUIRED / RECOMMENDED FOR THIS PAPER:

To be provided by the supervisor

- This question and answer booklet

To be provided by the candidate

- Pens, pencils, eraser and / or correction fluid
- Up to two scientific calculators.
- Written notes on **one** unfolded A4 sized paper; can be double-sided

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. All iPads and mobile phones must be turned off and in your bag along with any other devices and notes. Bags are to be closed and placed under the desk.

INSTRUCTION TO CANDIDATES:

1. **Read** through the paper to familiarise yourself with all of the questions.
2. Use a **blue or black** ballpoint / ink pen. Do not answer in pencil.
3. **Write** your answers in this booklet.
4. Should you require more space than you have been given please use **the spare sheet** (at the back of this booklet) and ensure that you include your name and the question / statement that you are responding to.

AT THE END OF THE EXAMINATION:

- Any planning sheets or other pieces of paper **MUST** be handed in with this booklet.
- At the end of the examination make sure that your name is on your booklet and any other pieces of paper used.

Structure of this paper

TOTAL QUESTIONS: 55

TOTAL MARKS: 66

<p><u>Section 1:</u> <i>Non-Calculator</i></p> <p>27 questions, 33 marks</p> <p>Attempt questions 1 - 27</p>	<p><u>Section 2:</u> <i>Calculator</i></p> <p>28 questions, 33 marks</p> <p>Attempt questions 1 - 28</p>
--	--

Instructions to candidates

1. Sitting this examination implies that you agree to abide by the examination rules set down by Kinross College.
2. Answer the questions in the space provided.
3. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.
4. A Spare page is included at the end of this booklet. It can be used for planning your responses and/or as additional space if required to continue an answer.
 - (a) Planning: If you use the spare page for planning, indicate this clearly at the top of the page. If you choose to use lined paper for planning, ensure your name and the title is clearly printed.
 - (b) Continuing an answer: If you need to use the space to continue an answer, indicate in the original answer space where the answer is continued, i.e. give the page number. Fill in the number of the question (s) that you are continuing to answer at the top of the page.
5. This examination contributes towards your grade and will be in your report. If you have any questions, please ask them during the ten-minute reading time.
6. Manage your time wisely. Always provide substantiation (evidence). Make sure that what you have written makes sense.

Note: Do not turn the page until you are asked to do so.

Section 1: NON-CALCULATOR (Total 33 marks)

- 1 How much change would you receive from \$50 if you bought 5 pairs of socks costing \$7 each? (1 mark)



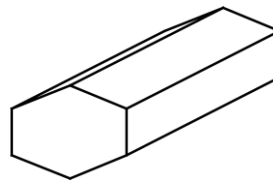
- \$12
- \$15
- \$35
- \$48

-
- 2 What is the missing number? (2 marks)

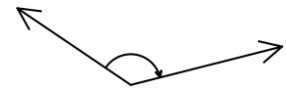
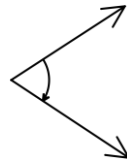
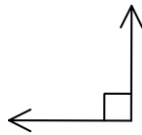
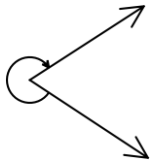
$$8 \times \square = 16 \times 6$$

-
- 3 What is the name of this solid? (1 mark)

- Hexagonal prism
- Hexagonal pyramid
- Pentagonal prism
- Pentagonal pyramid



4 Which diagram shows a reflex angle? (1 mark)



5 Isabel is trying to write down all the prime numbers less than 20.
She writes: 2, 3, 5, 7, 13, 17 and 19. Which number is missing? (1 mark)

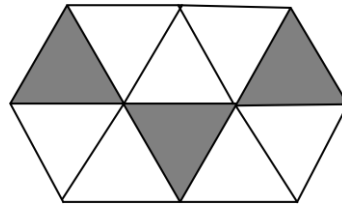
9

11

15

23

6 What fraction of the diagram is unshaded? (1 mark)



$\frac{3}{10}$

$\frac{1}{3}$

$\frac{3}{7}$

$\frac{7}{10}$

7 Kai has 124 lollies. He divides the lollies equally into seven bags to give to his friends.
How many lollies are left over? (1 mark)

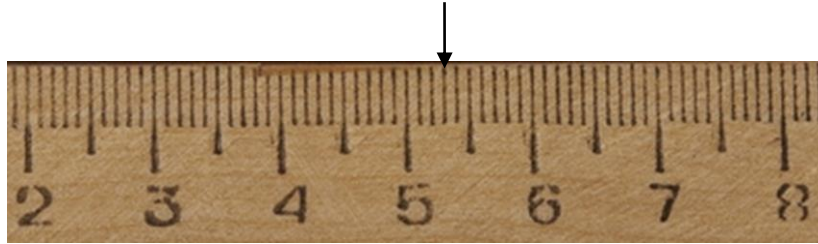
2

3

4

5

8 The diagram shows part of a 30 cm ruler. (1 mark)



What is the length indicated by the arrow?

0.3 mm

3 mm

5.3 mm

53 mm

9 A solid has five faces. Three of the faces are rectangles and the other two faces are triangles. What is the name of this solid? (1 mark)

Triangular prism

Triangular pyramid

Rectangular prism

Rectangular pyramid

10 Harvey has 3.98 litres of orange juice in bottles.

The bottles come in three sizes: 1.5 L, 650 mL and 330 mL. All the bottles are full.

How many bottles does Harvey have? (1 mark)

4

6

7

10

11 Eden buys a 500-gram box of weet-bix. Each weet-bix has a mass of 0.48 grams.

Which of these is the best estimate for the number of weet-bix in a 500-gram box?

(1 mark)

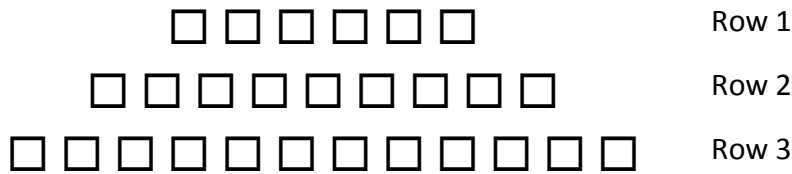
100

250

1000

2500

12 The seating plan for a hall makes this pattern. (1 mark)



If this pattern continues, how many seats are in Row 6?

- | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 6 | 13 | 18 | 21 |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
-
-

13 The temperature rose from 13.6°C to 18.3°C .

How much did it rise? (2 marks)

14 Rose tosses a normal coin 5 times. It lands heads each time. She tosses it a sixth time.

Which of the following is true? (1 mark)

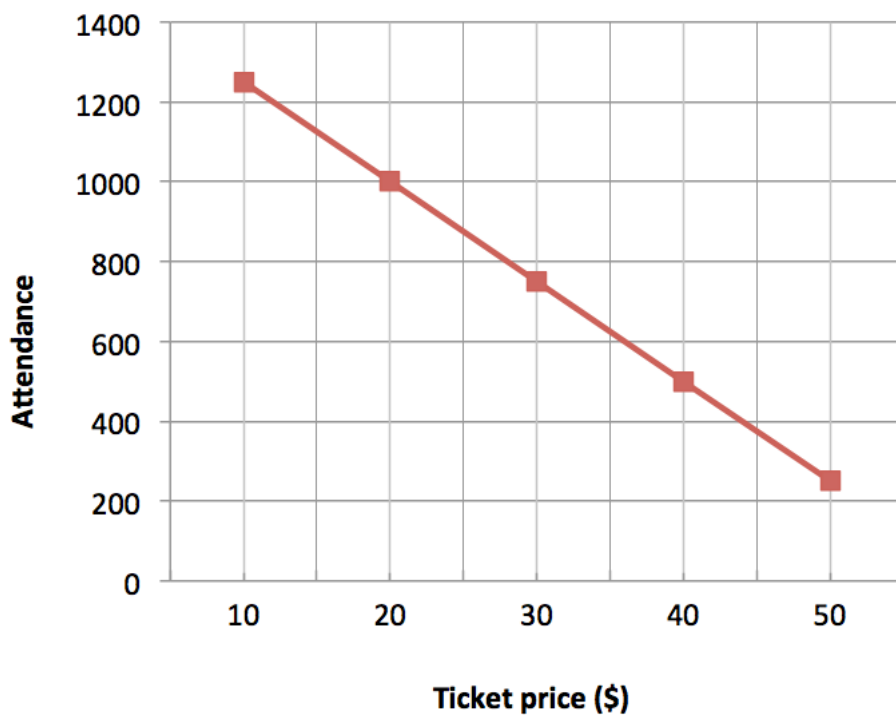
- It is more likely to land heads than tails.
- It is certain to land tails.
- It has an equal chance of landing heads or tails.
- It is more likely to land tails than heads.

15 The median of the following six numbers is 6. What is the missing number? (1 mark)

1, 5, , 7, 8, 11

- 5
 - 8
 - 12
 - 13
-
-

16 Alyssa drew this graph to show the attendance at drama performances to the ticket price. (1 mark)



Which statement best describes the graph?

- As the ticket price goes up, attendance goes down.
 - As the ticket price goes up, attendance goes up.
 - As the ticket price goes down, attendance goes down.
 - As the ticket price goes down, attendance stays the same.
-

17 A set of traffic lights is green for half the time, orange for $\frac{1}{5}$ of the time and red for the rest of the time. What fraction of the time is the set of traffic lights red? (1 mark)

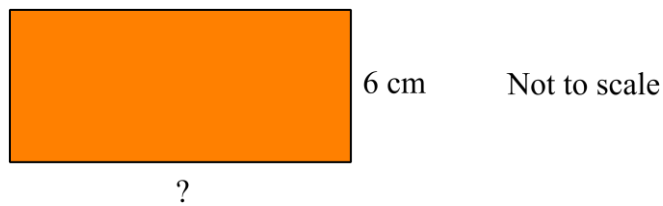
$\frac{1}{3}$

$\frac{3}{10}$

$\frac{4}{5}$

$\frac{9}{10}$

18 The area of this shaded rectangle is 84 cm^2



What is the length of the shaded rectangle? (2 marks)

19 Evelyn buys boxes of apples. Each box costs \$48. The total cost of the boxes is 48×25 . Which calculation is another way of working out the total cost? (1 mark)

- 12×100
- 24×500
- $(24 \div 2) \times 50$
- $28 + (20 \times 25)$



20 How many $\frac{1}{2}$ hour periods are there in 9 hours? (1 mark)

9

11

18

12

21 Christian's mass was 90 kg. In the past six months his mass decreased by 10% and then increased by 10%. What is Christian's current mass? (1 mark)

81 kg



89.1 kg



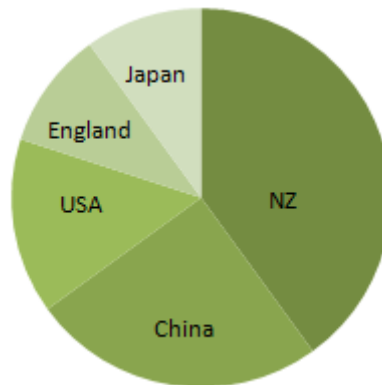
89.5 kg



90 kg



22 The diagram below shows the proportion of flights to different countries for an airline? (1 mark)



Which country makes up about 40% of the airline's flights?

China



England



NZ



USA



23 A USB stick has the dimensions 40 mm × 10 mm.

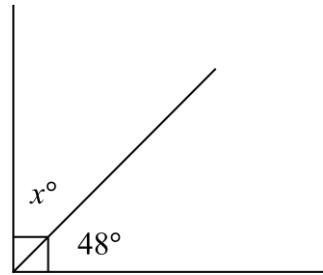
A scale drawing is shown opposite.

What scale is used in the drawing? (1 mark)

- 1 cm represents 5 mm
- 1 cm represents 2 mm
- 2 cm represents 1 mm
- 5 cm represents 1 mm



24 What is the value of x ? (1 mark)



Not to scale

25 What is \$10 as a percentage of \$40? (1 mark)

4%

10%

25%

40%

26 What is the solution to $\frac{5}{6} - \frac{2}{3}$? (2 marks)

27 Owen rolled a die 50 times. His results are shown in the table below.

Top face	Number of rolls
1	6
2	9
3	10
4	8
5	10
6	7
Total	50

What percentage of rolls resulted in a 4? (2 marks)

END OF EXAMINATION

Section 2: CALCULATOR (Total 33 Marks)

1 $0.0064 \div 0.001$ is equal to: (1 mark)

0.0054

6.4

64

640

2 Which number is five thousand and seventy-four? (1 mark)

5047

5740

5704

5074

3 Gabriel paid \$1.20 for strawberries at this price. How many grams of strawberries did he buy? (1 mark)

0.25 g

25 g

120 g

250 g



1 kg for \$4.80

4 The area of NSW is 801 956 square kilometres.
What is this area rounded to the nearest hundred square kilometres? (1 mark)

800 000

801 000

802 000

801 900

-
- 5 A prize of \$6069 is shared equally among 15 friends.
How much does each person get in dollars and cents? (2 marks)

dollars and

cents

- 6 The table below shows the number of people who attended dance lessons on weekdays over 4 weeks.

Daily Attendance				
	Week 1	Week 2	Week 3	Week 4
Monday	24	28	24	32
Tuesday	41	35	39	37
Wednesday	52	55	67	59
Thursday	56	77	58	75
Friday	44	82	63	39

Which day had the greatest total attendance over the 4 weeks? (1 mark)

Monday

Tuesday

Wednesday

Thursday

-
- 7 Stephanie rode her bike for 60 seconds.
She rode at a speed of 5 metres per second.

How far did Stephanie ride? (1 mark)



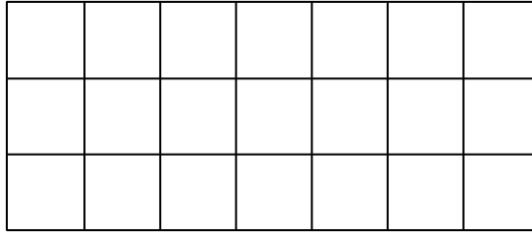
12 m

65 m

300 m

600 m

-
- 8 How many squares must be shaded so that six-sevenths of the rectangle is shaded?
(1 mark)



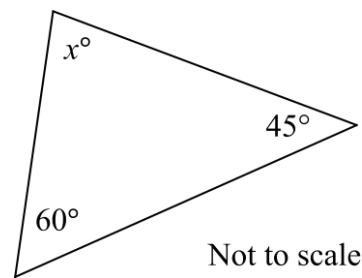
- 6 14 16 18

-
- 9 A tank has a capacity of 11.25 kilolitres.
How many litres does the water tank hold when it is full? (1 mark)

- 1.125 11 025 11 250 11 250 000

-
- 10 What is the size of the angle
marked with the letter x ? (1 mark)

- 45°
 75°
 85°
 105°



-
- 11 What is the value of 25^2 ? (1 mark)

- 5 27 50 625

-
- 12 The price list at Ebony's clothing store is shown below.

Item	Sale price
Belt	\$27.60
Coat	\$239.00
Jeans	\$119.00
Shirt	\$93.00
Shoes	\$128.00

How much change do I receive from \$1000, if I purchase two shirts, two belts, a coat and a pair of shoes? (1 mark)

\$393.40

\$391.80

\$606.60

\$608.20

13 The diagram shows the length and width of a large TV screen.

What is the area of the TV screen?

(1 mark)



55.5 cm

93.5 cm

- 72 square centimetres
- 298 square centimetres
- 2594.625 square centimetres
- 5189.25 square centimetres

14 Which fraction is the largest? (1 mark)

$\frac{3}{4}$

$\frac{3}{5}$

$\frac{13}{20}$

$\frac{31}{50}$

- 15 The distance on a map between Canning Town and Johnson Creek is 7.4 cm.
On the map 1 cm represents 5 km.



What is the actual distance between Canning Town and Johnson Creek?
(1 mark)

- 2.7 km 17.4 km 37 km 74 km
-
-

- 16 This table summarises the time Amy spent walking her dog over five days.

Day	Time
Saturday	1 hour
Sunday	43 minutes
Monday	45 minutes
Tuesday	1 hour and 2 minutes
Wednesday	50 minutes

What was the average (mean) time for these walks? (1 mark)

- 40 minutes 52 minutes 65 minutes 260 minutes
-
-

- 17 One-fifth of the length of Toby's skipping rope is 35 cm. How long is the rope?
(2 marks)

-
- 18 There were only 16 students in Sam's class on Wednesday. The other 9 were absent.

What percentage of Sam's class were absent? (1 mark)

9%

32%

36%

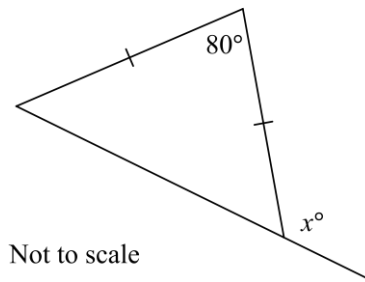
64%

19 Jett sold one hamburger for \$3.60 every two minutes at a football match. How many minutes would it take to sell \$180 worth of hamburgers at the same rate? (1 mark)

- 25 minutes
- 50 minutes
- 55 minutes
- 100 minutes



20 The diagram shows an isosceles triangle. The exterior angle is x° .



Find the value of x . (1 mark)

80°

100°

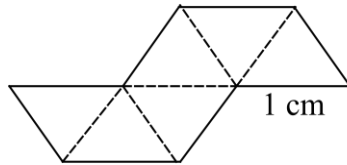
120°

130°

21 Leah has a bag of jelly beans. 25% of the jelly beans are green. She takes a red jelly bean from the bag and eats it. Without looking, she takes another jelly bean from the bag. What is the chance that this jelly bean is green? (1 mark)

- Less than 25%
- Greater than 25%
- Equal to 25%
- Unable to be determined.

22 This shape is made with 6 equilateral triangles.



Not to scale

What is the perimeter of the shape? (1 mark)

6 cm



8 cm



10 cm



18 cm



23 A plumber calculates the price of a job using a service fee and amount per hour. This table shows some of the job prices.

Hours	2	4	5	6
Job price	\$204	\$328	\$390	\$452

How are the job prices calculated? (1 mark)



\$94 service fee + \$47 per hour



\$94 service fee + \$94 per hour

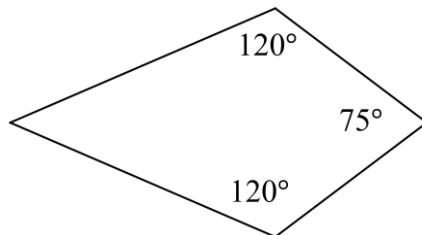


\$80 service fee + \$62 per hour



\$80 service fee + \$124 per hour

24 A kite is shown below.



Not to scale

What is the size of the missing angle? (1 mark)

30°



45°



60°



75°



25 In this table, each pair of numbers follows the rule:

$$\bigcirc = 3 \times \square + 1$$

□	○
---	---

What is the missing number in this table? (1 mark)

- 124
- 149
- 151
- 153

1	4
3	10
10	31
50	?

26 A square has an area of 81 square centimetres.
What is its perimeter? (2 marks)

centimetres

27 What number will make this number sentence true? (2 marks)

$$5.62 + 4.78 = \text{ } + 4.80$$

28 Christopher thought of a number. He doubled the number and then added three.
The result was 11. What was the original number? (2 marks)

