YEAR 8 MATHEMATICS EXAMINATION
SEMESTER 1 2016

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: 54
TOTAL MARKS: 68
Section 1:

NON-CALCULATOR

28 questions, 34 marks

Attempt questions 1 - 28

Section 2:

CALCULATOR

26 questions, 33 marks

Attempt questions 1 - 26

AT THE END OF THE EXAMINATION
Attach any extra sheets used to this Question/Answer booklet.

1   What is the remainder when 673 is divided by 7?

1	2	3	4
○	○	○	○

2   What is 15% expressed as a fraction in its simplest form?

$15\frac{1}{5}$	$\frac{1}{5}$	$\frac{3}{20}$	$\frac{1}{3}$
○	○	○	○

3   In Paige's class, the ratio of boys to girls is 4:5.
    How many girls are in the class if there are 16 boys?

17	18	20	25
○	○	○	○

4   Anthony had saved $150 to buy his mum a gift for Mother's day. After buying the gift, he had $45 left. What percentage of his money did he spend?

30%	33%	40%	70%
○	○	○	○

5   What is 0.48 expressed as a fraction in its simplest form?

$\frac{1}{48}$	$\frac{12}{25}$	$\frac{24}{5}$	$\frac{48}{10}$
○	○	○	○

6 Bailey, Chris and David are given $100 between them.

Chris is given $\frac{2}{5}$ of the money and David is given $\frac{1}{4}$ of the money.

How much money is left for Bailey?

$35.00	$65.00	$66.67	None of these answers
○	○	○	○

7 Joseph spent yesterday in Hobart. The temperature at 5 am was $-1°C$.
Between 5 am and 5 pm the temperature rose by $9°C$ and then fell by $12°C$.
What was the temperature at 5 pm?

$-18°C$	$-4°C$	$2°C$	$16°C$
○	○	○	○

8 174 – 97 is equal to:

174 – 100 – 3	174 + 100 – 3	174 – 3 – 100	174 – 100 + 3
○	○	○	○

9 Which of the following numbers is *not* a prime number?

2	7	19	39
○	○	○	○

10 The HCF and LCM (in that order) of 24 and 32 are:

24 and 32	12 and 96	8 and 96	96 and 12
○	○	○	○

11 Two numbers have a sum of –9 and a product of 14. These numbers are:

−7 and −2	−2 and 7	14 and −1	14 and −9
○	○	○	○

12 If *x* and *y* are both negative integers with *x* < *y* then *y* − *x* is:

○   always negative

○   always positive

○   positive or negative, depending on the values of *x* and *y*

○   zero

13 The reciprocal of $4\frac{3}{8}$ is:

$\frac{35}{8}$ $\frac{8}{27}$ $\frac{3}{8}$ $\frac{8}{35}$

○   ○   ○   ○

14 Which of the following is the mixed number equivalent to 12.34 in its simplest form?

$12\frac{17}{50}$ $12\frac{3}{10}$ $12\frac{34}{1000}$ $12\frac{38}{50}$

○   ○   ○   ○

15 When dividing a decimal by 10 000 the decimal place moves:

○   three places to the left

○   four places to the right

○   four places to the left

○   it's impossible to determine without knowing the decimal being divided

16 A fruit bowl contains 5 oranges, 4 apples and 3 bananas. The ratio of apples to other fruits in its simplest form is:
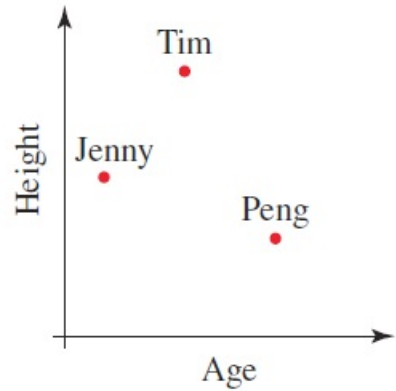
4:5   4:8   3:4   1:2

○   ○   ○   ○

17 The graph shows the ages and heights of three Year 8 students.
Which one of the following statements is true?

○   Tim is the eldest and the tallest.

○   Jenny is older than Peng and younger than Tim.

○   Peng and Tim are the same age.

○   Peng is the shortest.

18 The first number in a pattern is 48.
To go from one number to the next the rule is to divide by 4.
What is the fourth number in the pattern?

$\dfrac{4}{3}$ $\dfrac{3}{4}$ $\dfrac{1}{3}$ $\dfrac{1}{4}$

○   ○   ○   ○

19 The cost of bananas per kilogram is $2. At this rate, when Sam buys 3.5 kg, how much does she pay?

$2 $5.50 $7 $10.50

○   ○   ○   ○

20 How many prime numbers less than 100 are there?

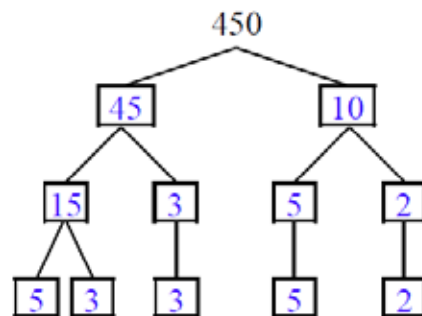19   21   22   25

○   ○   ○   ○

21 On the right is a complete factor tree for the number 450.

Use this to express 450 as a product of its primes in index form.

450

45   10

15   3   5   2

5 3   3   5   2

22 The product of the three consecutive even numbers 4, 6 and 8 is 192.
Find three consecutive even numbers with a product of 48.

23 If the value of a = 8 and the value for b = 5 then what would be the answer to $a + 3 \times b$?

23   33   43   55

○   ○   ○   ○

24 The temperature at midnight was -3 °C. By 8 am it had risen by 6 °C. What was the temperature at 8 am?

-9°C   -6°C   3°C   9°C

○   ○   ○   ○

25 Of the 48 children in the park, $\frac{3}{4}$ are wearing a hat.

How many children are **not** wearing a hat?

26 Using the table below determine which numbers are divisible by 3, 4 and 6?

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

27 Sarah bought a packet of chocolates and shared it with six friends.

They each received 4 chocolates and three were left over.

If you share the same number of chocolates equally with five friends, how many chocolates will be left over?

28 Which two numbers will have a difference of 2.5?

-3, -2.5, -2, -1.5, -1, -0.5
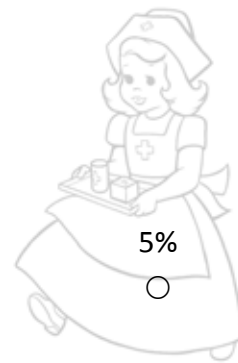
STOP – END OF SECTION

1   Adelaide has about $1\frac{1}{4}$ million people and there are 6250 nurses.

What is the percentage of nurses in the population?

0.005%	0.05%	0.5%	5%
○	○	○	○

2   What fraction of an hour is 12 minutes?

○ $\dfrac{1}{5}$ ○ $\dfrac{3}{25}$

○ $\dfrac{1}{2}$ ○   None of these answers
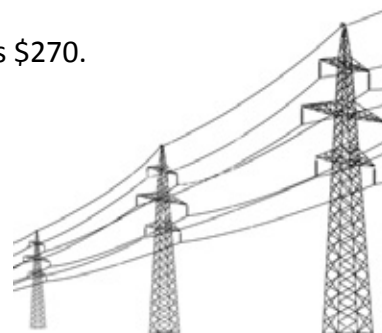
3   Marcus's electricity bill was $360 last month. This month it is $270.
What is the percentage decrease?

○   25%   ○   33%

○   45%   ○   55%

4   Eliza was offered a discount of 15% on any item in the store. How much would Eliza pay for a shirt in this store with a selling price of $65?

$9.75	$50	$55.25	$56.25
○	○	○	○

5 Alice and Layla receive 72 text messages in the ratio 5:4.
   How many text messages does Layla receive?

| 8 | 32 | 40 | 56 |
| ○ | ○ | ○ | ○ |

6 $\sqrt{121} + 2^3 \times 3^2 + (-9) \div (-3)$ evaluates to:

| 174 | 86 | -54 | 175 |
| ○ | ○ | ○ | ○ |

7 When the ratio 32:56:64 is fully simplified, it becomes:

| 2:3:4 | 16:28:32 | 1:2:3 | 4:7:8 |
| ○ | ○ | ○ | ○ |

8 Maria can touch type 159 words in 3 minutes.
   How many words can she type in 12 minutes?

| 1908 | 477 | 636 | 954 |
| ○ | ○ | ○ | ○ |

9 Three integers have a sum of 50.
   The second integer is four times as large as the first integer and the third integer is 4
   less than the second integer.
   What are the three integers?

10 Fred operates a lemonade stand at the local fair, charging $0.60 per drink. At the start and end of the day, he has the following change.

Coin/note	$5	$2	$1	$0.50	$0.20	$0.10	$0.05
Start of day	2	5	7	4	8	3	6
End of day	5	3	6	10	12	14	20

How much money did he have at the start of the day?

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11 Julie completes a dive 5 m below sea level; she comes up 0.5 m every 2 seconds.
After 10 seconds, what position will she be at?

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12 Ben has $847 in his bank account.
He withdraws $65 each week, and then deposits $22.
After 4 weeks, what is his final balance?

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13 The sum of two numbers is 39 and their difference is 5. What is the larger number?

20   22   25   28
○   ○   ○   ○

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14 The shovel of a giant mechanical excavator can move 13 tonnes of rock in each load.
How many loads are needed to shift 750 tonnes of rock?

50   54   57   58
○   ○   ○   ○

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15 A racing bike's odometer shows 21 432 km at the start of a race and 22 110 km at the end of the race.
How far was the race?

16 Aunt Elly's favourite nephew visits her every 30 days.

The other nephew visits her every 42 days.

If both nephews visit Aunt Elly on one particular day, how long will it be before they both visit her again on the same day?

17 The temperature in Greenland on a sunny day rises 19°C from its minimum temperature to a maximum of -4°C. What was the minimum temperature on the day?

-35°C ○   -23°C ○   15°C ○   21°C ○

18 In a survey, 35% of respondents said they felt a penalty was too lenient and 20% felt it was too harsh. If there were 1200 respondents, how many felt the penalty was appropriate?

120 ○   240 ○   420 ○   540 ○

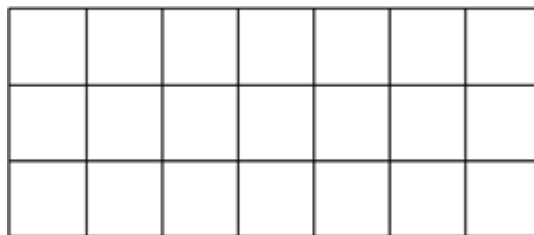19 If 6% of an amount of money is $30, how much is the full amount of money?

$150 ○ $350 ○ $500 ○ $780 ○

20 How many squares must be shaded so that six-sevenths of the rectangle is shaded?

6 ○   14 ○   16 ○   18 ○

21 On three tests, a student scored a total of 255 marks.
    If the student improved her performance on each successive test by 4 marks, what was
    the mark for each test?

    80, 84, 88   81, 85, 89   78, 86, 91   79, 83, 87
        ○   ○   ○   ○

22 There are 184 students who need to be seated for a dinner in a hall. If all the tables
    need to be full, select whether the school should use:

    18 tables   19 tables   23 tables   31 tables
        ○   ○   ○   ○

23 A couple bought a laptop with an interest free loan of $2400. They paid a deposit of
    $800, and paid off the remainder over the next 5 months. How much were the monthly
    repayments?

    $480 $320 $160 $200
        ○   ○   ○   ○

24 A restaurant served 315 meals. One-third of the people ate a two-course meal while the
    remainder ate a three-course meal. How many courses did the chef prepare?

    840   315   630   1575
        ○   ○   ○   ○

25 $100 = 900 - x$. What is the value of x?

    ┌─────────────────┐
    │   │
    │   │
    └─────────────────┘

26 What number would you insert into the following expression to get an answer of 19?

$$5 \times 3 + \_ \div 6$$

24	30	36	42
○	○	○	○

STOP – END OF TEST