

# YEAR 7 MATHEMATICS EXAMINATION

## SEMESTER 1 2016

### QUESTION AND ANSWER BOOKLET

**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: 55**

**TOTAL MARKS: 64**

#### **Section 1:**

**NON-CALCULATOR**

**27 questions, 32 marks**

*Attempt questions 1 - 27*

#### **Section 2:**

**CALCULATOR**

**28 questions, 34 marks**

*Attempt questions 1 - 28*

#### ***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 32 Marks)**

- 1 Spring Mount Company sells water in packs of six bottles. How many packs are there in a truck containing 744 bottles?



- 100
- 140
- 124
- 122

- 
- 2 Toby spent \$8.65 at a fast food shop. How much change does he receive from \$20?

- 
- 3 Which of the following are all square numbers?

- 10, 20, 30
- 4, 36, 81
- 2, 4, 6
- 12, 24, 36

4 What is the sum of 8, 1086 and 2107?

1311

2301

3180

3201

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5 Sarah is trying to write down all the prime numbers less than 30.  
She writes: 2, 3, 5, 7, 11, 13, 17, 23 and 29. Which number is missing?

19

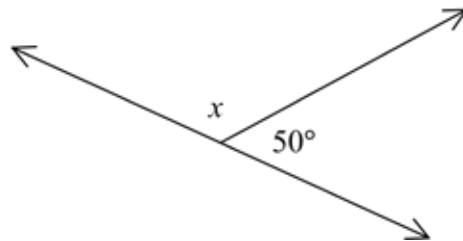
11

15

23

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6 What is the value of  $x$ ?



Not to scale

$50^\circ$

$110^\circ$

$130^\circ$

$150^\circ$

---

- 
- 7 Temperature at Jindabyne was  $-2^{\circ}\text{C}$  at 7 pm and dropped a further  $10^{\circ}\text{C}$  overnight. What was the coldest overnight temperature?



$-12^{\circ}\text{C}$

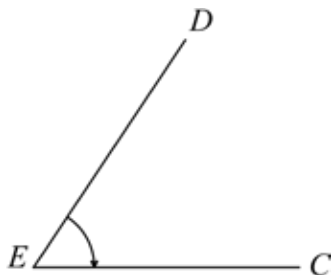
$-10^{\circ}\text{C}$

$-8^{\circ}\text{C}$

$+8^{\circ}\text{C}$

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- 8 What is the correct name for the following angle?



$\angle CDE$

$\angle CED$

$\angle DCE$

$\angle ECD$

---

9 What is the total number of degrees in a full revolution?

90°

380°

180°

360°

---

10 Mark, Lara and Carlos work at a busy cinema complex. For a particular movie, Mark sells  $\frac{3}{5}$  of all the tickets and Lara sells  $\frac{1}{3}$ . What fraction of the movie tickets are sold by Mark and Lara?

$\frac{1}{3}$

$\frac{1}{5}$

$\frac{9}{15}$

$\frac{14}{15}$

---

11 Which statement is equivalent to  $48.25 \div 5$ ?

$482.5 \div 500$

$4825 \div 5000$

$4825 \div 500$

$4825 \div 50$

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12 What is  $\frac{4}{12}$  of 48?



16

14

18

32

---

13 After successfully lifting 72 kg, Jett adds another 18 kg to the weights for his next attempt. What percentage increase in weight does this represent?

- 9%
  - 20%
  - 25%
  - 80%
- 

14 Between which two consecutive numbers does  $\sqrt{68}$  lie?

- 5 and 6
  - 6 and 7
  - 7 and 8
  - 8 and 9
- 

15 What is the missing number in this pattern? 7, 21, 63, , 567

- 252
  - 84
  - 298
  - 189
-

16 A pen costs 60 cents. How many pens can be bought for \$2.40?



- 3
- 4
- 8
- 12

---

17 What is the solution to  $\frac{6}{7} - \frac{3}{5}$ ?

$\frac{53}{7}$

$\frac{1}{5}$

$\frac{9}{35}$

$\frac{7}{12}$

18 The cost of a train ticket is \$11.60 for an adult and \$8.96 for a child. Find the cost of tickets for 1 adult and 2 children.

- \$21.36
  - \$30.52
  - \$29.52
  - \$32.36
- 

19 Which of the following numbers is divisible only by prime numbers, itself and 1?

- 30
  - 32
  - 42
  - 35
- 

20 Evaluate  $3 \times (8 \div 2 + (9 - 4))$

- |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 6                     | 15                    | 27                    | 17                    |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
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21 Find the highest common factor (HCF) of 36 and 45.

- |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|
| 8                     | 9                     | 10                    | 15                    |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
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22 Which decimal has the largest value?

5.0109



5.091



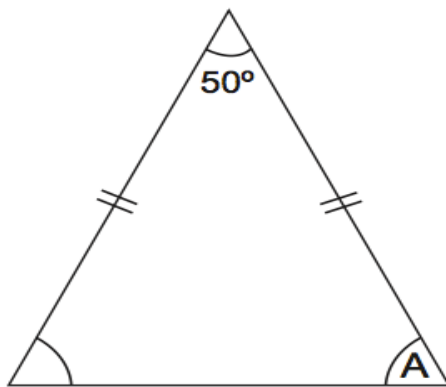
5.0901



5.0091



23 What is the size of angle 'A' in this isosceles triangle?



24 In a class of 36 students,  $\frac{3}{4}$  of the students have a pet. How many students do not have a pet?

27

12

9

6

25 Rewrite the following integers into index form.

$$3 \times 3 \times 2 \times 2 \times 3 \times 3 \times 5 \times 3 \times 2 \times 2 =$$

---

26 What is the solution to  $\frac{2}{3} \times \frac{3}{10}$ ?

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27 This table shows the number of students who wear glasses and those who do not wear glasses in a Year 7 class.

	Do wear glasses	Do not wear glasses
Male	3	12
Female	8	7

Out of the whole class, what percentage of males do not wear glasses?

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**STOP – END OF SECTION ONE**

**Section 2: CALCULATOR (Total 28 Marks)**

1 Using numerals, fifty-two thousand and seventy-six is:

52 000 076

520 760

52 076

52 760

2  $4 \times 1000 + 8 \times 100 + 3 \times 1$  is the expanded form of:

4 083

483

4830

4803

3 Swan Taxis can take up to four passengers each. How many taxis are required to transport 59 people?

- 16
- 14
- 15
- 12



4 A car's odometer shows 37 854 kilometres at the start of a journey. When the driver stops for lunch, the odometer reads 38 012 kilometres. How far has the car travelled?

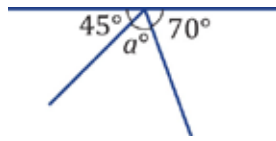
158 km

237 km

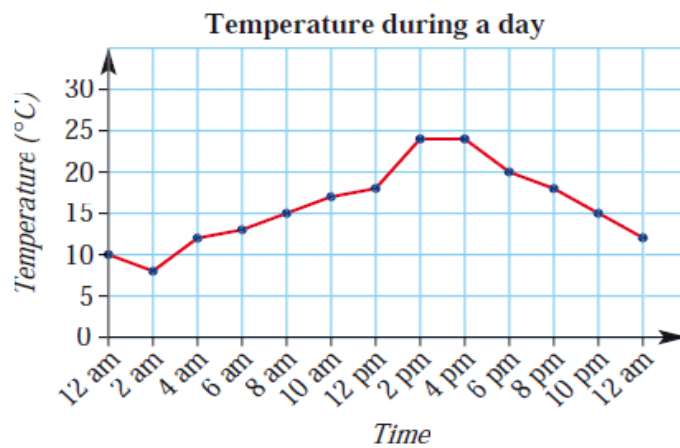
842 km

268 km

- 5 Without using a protractor, find the value of the unknown pronumeral in the following diagram.




- 6 Use the following graph, which shows the outside temperature over a 24-hour period, to estimate the temperature at 3 a.m.



5°

7°

10°

12°

- 7 A pool area includes 68 square metres of paving at \$32 per square metre. What is the total cost of paving?



\$2 176

\$100

\$2 760

\$672

8 Which of the following fractions are *not* equivalent to  $\frac{9}{6}$ ?

$$\frac{12}{8}$$

$$1\frac{2}{3}$$

$$\frac{3}{2}$$

$$1\frac{4}{8}$$

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9 Solve and simplify the following:  $1\frac{2}{3} + 2\frac{3}{4}$

$$\frac{5}{7}$$

$$\frac{6}{12}$$

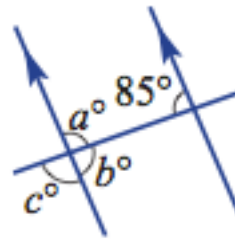
$$\frac{53}{7}$$

$$4\frac{5}{12}$$

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10 What is the size of the angle marked with the letter  $a$ ?

- $45^\circ$
- $75^\circ$
- $85^\circ$
- $95^\circ$



11 What is the value of  $13^2$ ?

$$169$$

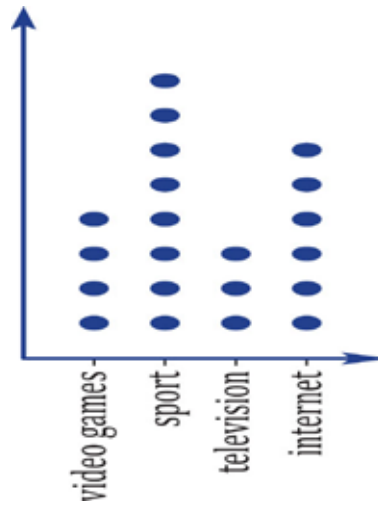
$$126$$

$$130$$

$$62$$

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12 The following is a dot plot of Year 7B's favourite after-school activities.



Of those listed, what is the least popular after-school activity for this group of students?

internet

video games

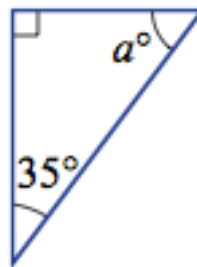
sport

television

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13 What is the size of the angle marked with the letter  $a$ ?

- $50^\circ$
- $55^\circ$
- $90^\circ$
- $180^\circ$



14 What is the supplement of  $50^\circ$ ?

$50^\circ$

$40^\circ$

$130^\circ$

$290^\circ$

---

15 Evaluate  $14 - (5 + (-7) \times 3) \div 2$ :

22

17

15

10

---

16 Daily rainfalls for four days over Easter were 12.5 mm, 3.25 mm, 0.6 mm and 32.76 mm. What was the total rain over the four-day Easter holiday?

15.75

47.6

49.11

35.84

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17 The temperature one morning in Australia is  $15^\circ\text{C}$ .

Over the course of the day the temperature reaches a maximum of  $42^\circ\text{C}$ . How much has the temperature risen?

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18 As a decimal,  $\frac{6}{11}$  is equal to:

0.54

$0.\overline{54}$

$\overline{0.54}$

$\overline{0.54}$

19 Wendy is on a mobile phone plan that charges her 3 cents per text message. On average, Wendy sends 10 text messages per day. What will it cost Wendy for 100 days of sending text messages at this rate?



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20 What is 0.8547 rounded to 3 decimal places?

- 0.855
- 0.86
- 0.845
- 0.850

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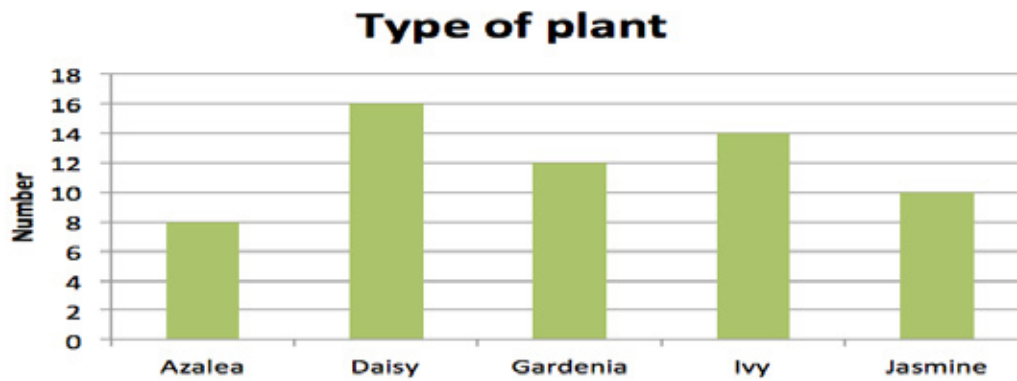
21 A maths competition consists of 20 multiple-choice questions, which are scored as follows:

- 3 points for every correct response
- 2 points are deducted for every incorrect response
- 1 point is deducted for unanswered questions

Emily answers 13 questions correctly, 2 incorrectly and left 5 unanswered. What is her score?



22 The number of each plant in stock at a nursery is shown in the column graph.



What is the total number of plants in stock?

8



24



60



48

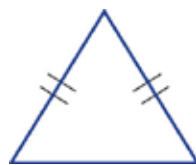


23 Express the following percentages as decimals.

6.7% \_\_\_\_\_

149% \_\_\_\_\_

24 The angle sum of a triangle is always.



$80^\circ$



$145^\circ$



$90^\circ$



$180^\circ$



25 Evaluate the following expression:

$$2^4 \times 3^2$$

- 144
  - 36
  - 124
  - 72
- 

26 The following is taken from the menu at a pizza restaurant called Tony's Pizza:

	<u>Small</u>	<u>Large</u>	<u>Family</u>
Margherita	\$8.20	\$12.20	\$15.20
Vegetarian	\$8.70	\$12.70	\$15.70
Mushroom	\$8.50	\$12.50	\$15.50
Tropical	\$9.10	\$13.10	\$16.10
BBQ Chicken	\$9.30	\$13.30	\$16.30
Meat Lovers	\$9.60	\$13.60	\$16.60

The Carlton family orders three pizzas: a small Vegetarian, a large Meat Lovers and a family-sized BBQ Chicken. If Mrs. Carlton pays for the meal with a fifty-dollar note, how much change will she receive?

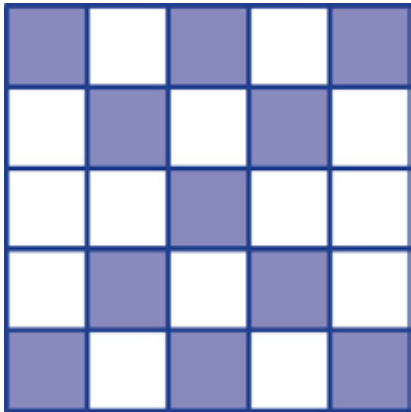
- \$36.80
  - \$11.40
  - \$13.20
  - \$16.20
- 

27 Convert the following fractions to percentages  $\frac{3}{8}$ ?

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28 What percentage of the following square has been shaded?



44%



50%



25%



40%



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**STOP – END OF TEST**