



## **Year 7 MATHEMATICS**

### **Yearly Examination**

# **TASK 4**

**Tuesday, 29<sup>th</sup> October 2013**

**Assessment Value: 30%**

**Outcomes Assessed:**

WMS4.1-5; MS4.1; DS4.1; NS4.3-4; SGS3.2a, 4.3

#### **General Instructions**

- Time Allowed – **60 minutes.**
- Reading Time – **5 minutes**
- Calculators may be used.
- Write using a blue or black pen.
- All necessary working should be shown in each question.
- All questions should be attempted.
- All questions are of equal value.
- Write your name and teacher's name at the top of each question.

#### **Total marks – 60**

**Examiner – Mrs. Waters**

**Assessor – Mr. Lowe**

#### **Markers –**

Question 1: Ms. Kenney

Question 2: Mrs. Stokes

Question 3: Miss McCluskey

Question 4: Mr. Organ

Question 5: Mr. Norton

Student's Name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

**QUESTION 1 (12 marks)**

(a) Write 0.08 as a fraction in its simplest form. **1**

(b) Write 9.8355 correct to 2 decimal places. **1**

(c) Convert  $\frac{3}{5}$  to a percentage. **1**

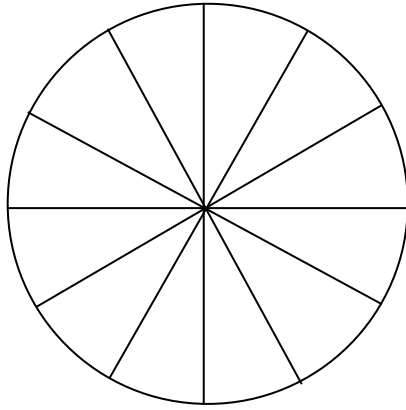
(d) Simplify  $6 - [15 - (-3 - 2)] =$  \_\_\_\_\_ **1**

(e) Simplify:  $\frac{3}{4} - \frac{2}{7} =$  **2**

(All working must be shown for full marks to be awarded)

**Question 1 continues over the page.**

- (f) Shade  $\frac{2}{3}$  of the following shape. 1



- (g) Which of the following is the largest number: 1

$$\frac{2}{5}, \quad 0.0401, \quad 4\%, \quad \frac{43}{100}, \quad 0.445$$

- (h) Write the word TRUE or FALSE for the following:

(i) The quotient of 18 and 6 is 3 1

(ii)  $-7 > -6$  1

- (i) Complete the following: 1

$$1\frac{1}{2} \times \boxed{\phantom{00}} = 4$$

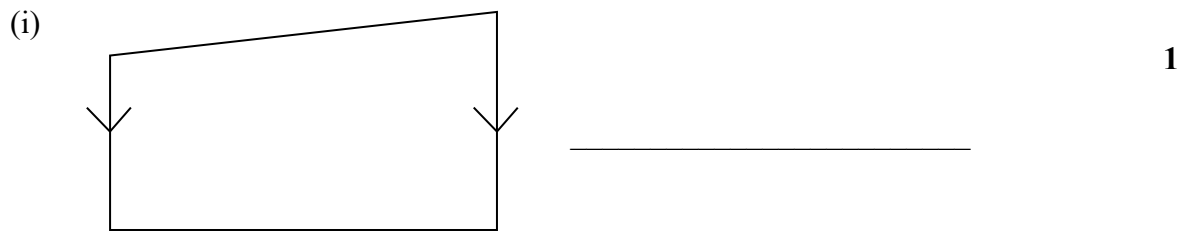
- (j) Which two numbers have a difference of 2.5? 1

$$-3, \quad -2.5, \quad -2, \quad -1.5, \quad -1, \quad -0.5$$

**End of Question 1**

**QUESTION 2 (12 marks)**

(a) Name these shapes (as descriptively as possible):



(b) Write a sentence (you may also draw a diagram) to explain each of the following geometrical terms.

(i) Bisect **1**

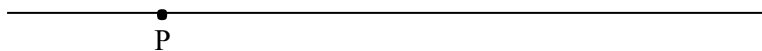
(ii) Perpendicular **1**

(c) Draw an acute angled triangle. **1**

**Question 2 continues over the page.**

- (d) Construct a  $90^\circ$  angle at point P, using your compass and ruler only.

2



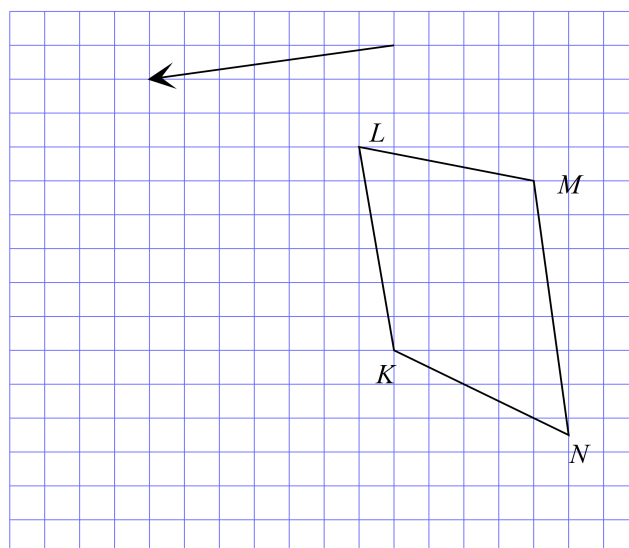
- (e) Complete the table, by placing a tick to show which quadrilaterals have the properties listed below:

2

| Property                           | Trapezium | Parallelogram | Square | Rhombus | Kite |
|------------------------------------|-----------|---------------|--------|---------|------|
| Both pairs of opposite sides equal |           |               |        |         |      |
| Only two axes of symmetry          |           |               |        |         |      |

- (f) Draw the image of  $LMNK$  when it is translated in the distance and direction of the arrow. Label the image  $L'M'N'K'$ .

2

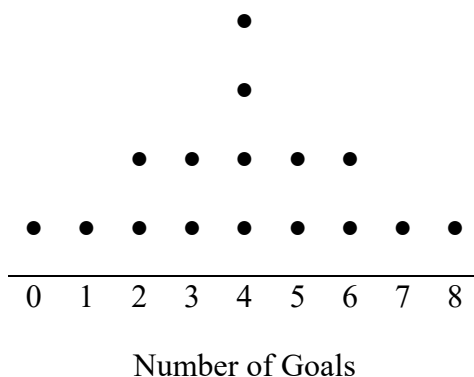


**End of Question 2**

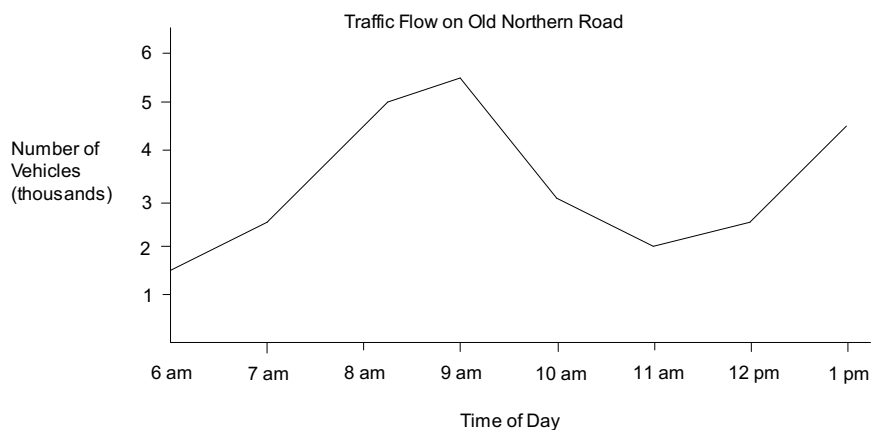
Student's Name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

**QUESTION 3 (12 marks)**

- (a) The dot plot shows the number of goals per game scored by Joanne's team during a hockey season.



- (i) How many games were played? **1**
- (ii) How many goals were scored in total? **1**
- (iii) What was the most common number of goals scored in a game? **1**
- (b) The following graph displays the traffic flow on Old Northern Road.

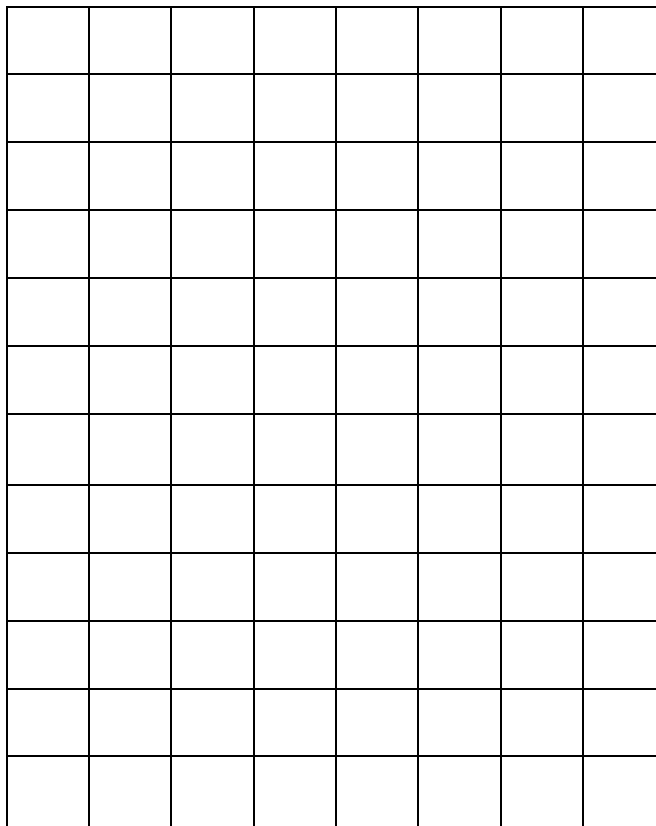


- (i) How many vehicles used the road at 11.00 a.m? **1**
- (ii) At what time of the day did traffic flow reach its peak? **1**
- (iii) During the time surveyed, when was the number of vehicles at its lowest? **1**

**Question 3 continues over the page.**

- (c) Corey drives to his friends place 90km away. He leaves home at 8am and arrives at his friends place at 9:30am. He stays there for an hour and a half, and then rides his bicycle home, arriving at 2pm. 3

Display this information on a travel graph on the grid below.



- (d) The following graph shows the types of pets owned by the 240 students in year 7 this year.

| Mice | None | Dogs | Fish | Cats |
|------|------|------|------|------|
|------|------|------|------|------|

- (i) Name the type of graph illustrated above. 1
- (ii) Which pet type was most popular? 1
- (iii) How many students **did not** have pets? 1

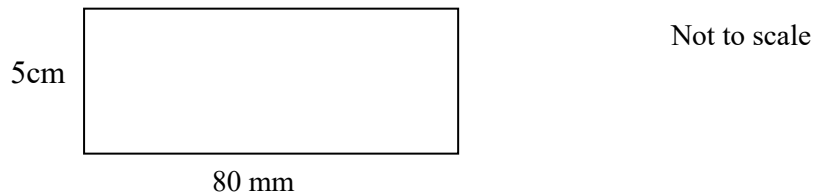
**End of Question 3**

Student's Name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

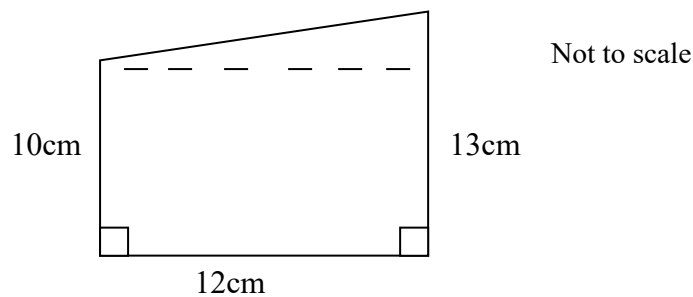
**QUESTION 4 (12 marks)**

- (a) What is the perimeter of a regular hexagon with side length 8cm? 1

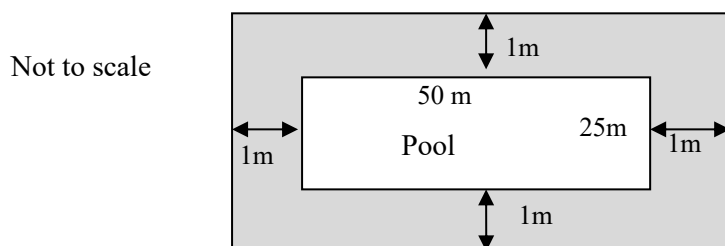
- (b) Calculate the perimeter of the following shape in centimetres. 2



- (c) Find the area of the following shape. 2



- (d) A rectangular swimming pool is 50 metres in length and 25 metres in width. A footpath 1 metre wide is to be constructed entirely around the outside of the swimming pool. 2



Find the area of the footpath.

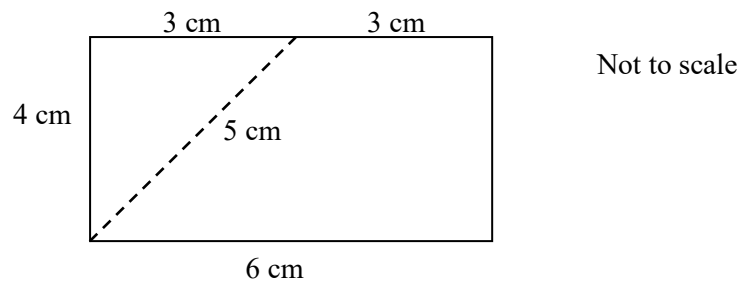
**Question 4 continues over the page.**

(e) Floor tiles measure 30cm by 30cm.

(i) Calculate the area of 1 tile? 1

(ii) How many tiles would be needed to cover the floor of a room 6m by 3.6m? 2

(f) This 4 by 6 centimetre rectangle is cut into 2 pieces along the dotted line as shown.



Find the perimeter of the figure found when the two pieces are rearranged to form:

(i) A parallelogram 1

(ii) A right angled triangle. 1

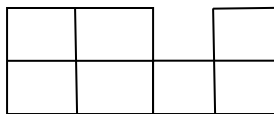
**End of Question 4**

Student's Name: \_\_\_\_\_ Teacher's Name: \_\_\_\_\_

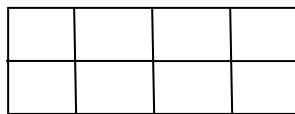
**QUESTION 5 (12 marks)**

- (a) Mr Haroldson ate  $\frac{1}{3}$  of a pie. He gave each of his two children half the amount he ate. What fraction of the pie was left? **1**

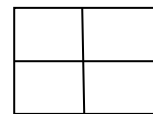
- (b) Sketch the object represented by these views: **2**



Front



Top



Right-side

- (c) Three pupils gave their answers to a problem as  $5\frac{1}{2}$ ,  $5\frac{3}{4}$ , and  $5\frac{3}{5}$ . **1**

If the correct answer was  $5\frac{7}{10}$ , which of the pupil's answers was the closest?

- (d) In a class test Billy worked out he scored 70%, the test was out of 80.

- (i) What mark did he get? **1**

- (ii) It was later realised that the test was actually out of 90. What percentage did Billy really achieve? **1**

**Question 5 continues over the page.**

- (e) The digits 1, 3, 4, 5 and 7 are to be placed in the boxes. Each number is used only once.

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} \times \begin{array}{|c|c|c|} \hline \square & \square & \square \\ \hline \end{array}$$

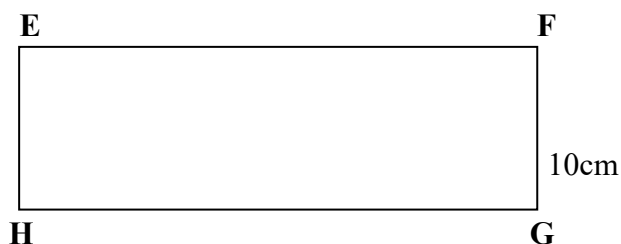
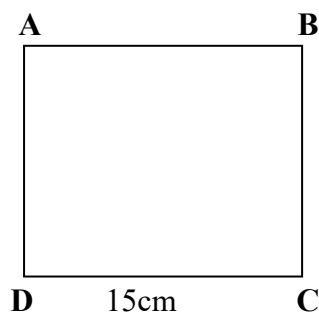
- (i) How can the remaining numbers be placed in the boxes so that the numbers multiply to give 6751. 1

$$\begin{array}{|c|c|} \hline 4 & \square \\ \hline \end{array} \times \begin{array}{|c|c|c|} \hline \square & \square & 7 \\ \hline \end{array}$$

- (ii) How can the numbers be placed to give the largest possible product. 1

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} \times \begin{array}{|c|c|c|} \hline \square & \square & \square \\ \hline \end{array}$$

- (f) The square **ABCD** and rectangle **EFGH** have the same area. What is the length of **EF** (correct to 1 decimal place)? 2



- (g) If  $\frac{4}{3} \times \frac{5}{4} \times \frac{6}{5} \times \frac{7}{6} \times \dots \times \frac{a}{b} = 4$ , find the value of  $a$  and  $b$ . 2

**End of Question 5**

**END OF EXAMINATION**

