MERCHANT TAYLORS'
School

# MERCHANT TAYLORS' SCHOOL

## 11+ OFFICIAL PRACTICE PAPER

# MATHEMATICS

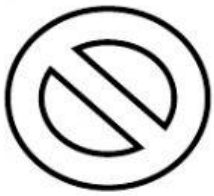
**Time Allowed: 60 minutes**

***Instructions:***

**Answer as many questions as possible. Some of them are easy at the start and become more difficult. You should show all your working on this question paper.**

**TURN OVER**

**1.** (a) Draw all of the lines of symmetry on the following shape.



(b) How many lines of symmetry has the shape below?

*Answer:* ……

(c) Draw a shape with exactly four lines of symmetry in the space below.

*[3 marks]*



***Turn Over!***

**2.** (a) Write in digits the number seventy three thousand and forty six.

*Answer:* ……..*[1 mark]*

(b) Write the answer to the sum of two hundred and six plus two thousand three hundred and twenty in words.

*Answer:* ……*[1 mark]*

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**3.**

| 2 | 5 | 9 | 15 | 24 | 28 | 36 | 45 | 53 |
|---|---|---|---|---|---|---|---|---|

**From the numbers in the box** above write down:

(a) A multiple of 7:

*Answer:* …… *[1 mark]*

(b) A square number:

*Answer:* …… *[1 mark]*

(c) The product of two of the other numbers in the box:

*Answer:* …… *[1 mark]*

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**4.** (a) Calculate the angles marked $x$ and $y$ in the diagram below:

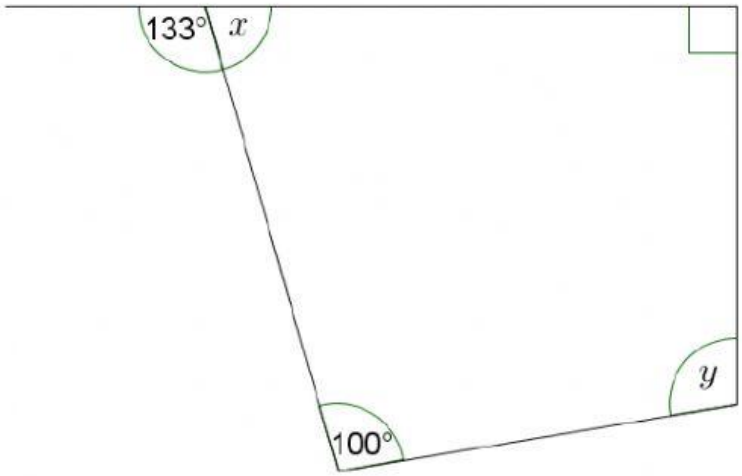


**Diagram not drawn to scale**

*Answer:* $x$ =……, $y$=……*[2 marks]*

(b) Calculate the angles marked $p$, $q$, $r$, $s$ and $t$ in the diagram below:

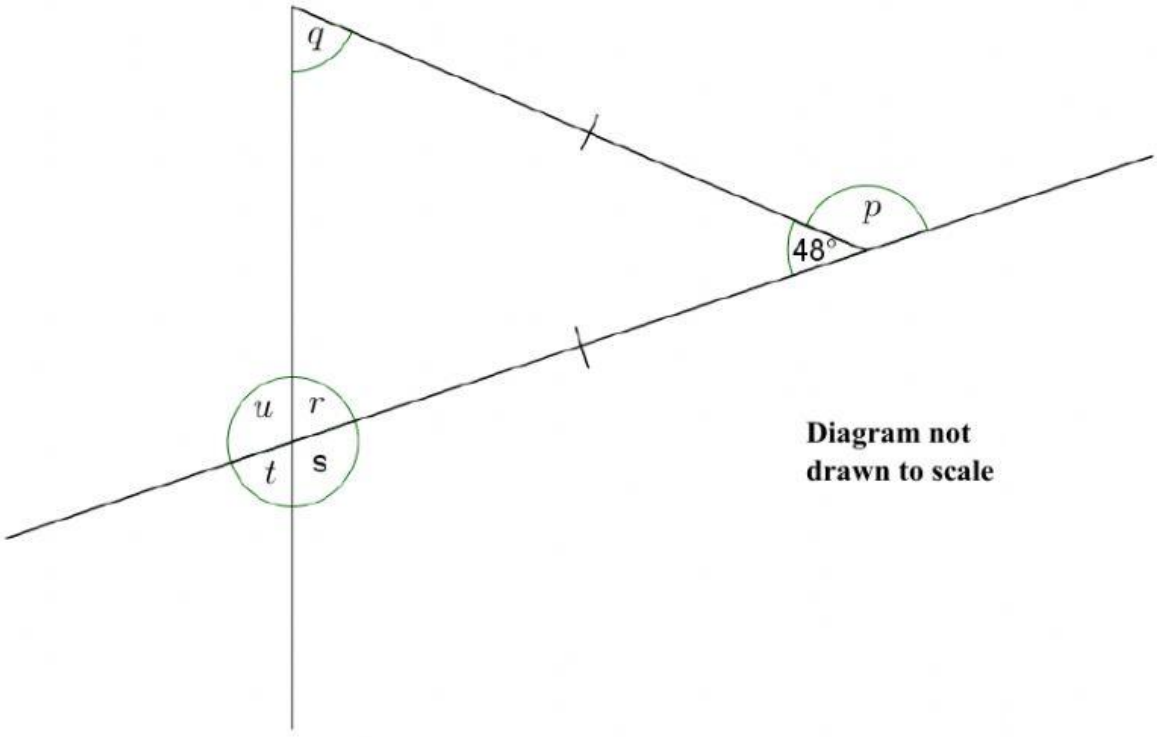


**Diagram not drawn to scale**

*Answer:* $p$ =……, $q$ =……, $r$ =……, $s$ =……, $t$ =……, $u$ =……*[4 marks]*



***Turn Over!***

**5.** (a) Sean scored 27 out of 45 in a test. Write this as a percentage.

*Answer:……..% [2 marks]*

(b) In a class of 30 pupils, 21 are girls. What percentage of the class is boys?

*Answer:……..% [2 marks]*

(c) Write 0.8 as a fraction in its simplest form.

*Answer:…… [2 marks]*

(d) Write 85% as a fraction in its lowest terms.

*Answer:……[2 marks]*

(e) Rearrange the following in order of size, ***smallest to largest.***

$\frac{9}{25}$, 0.371, $\frac{2}{5}$, 38%,

Answer:…… *[2 marks]*

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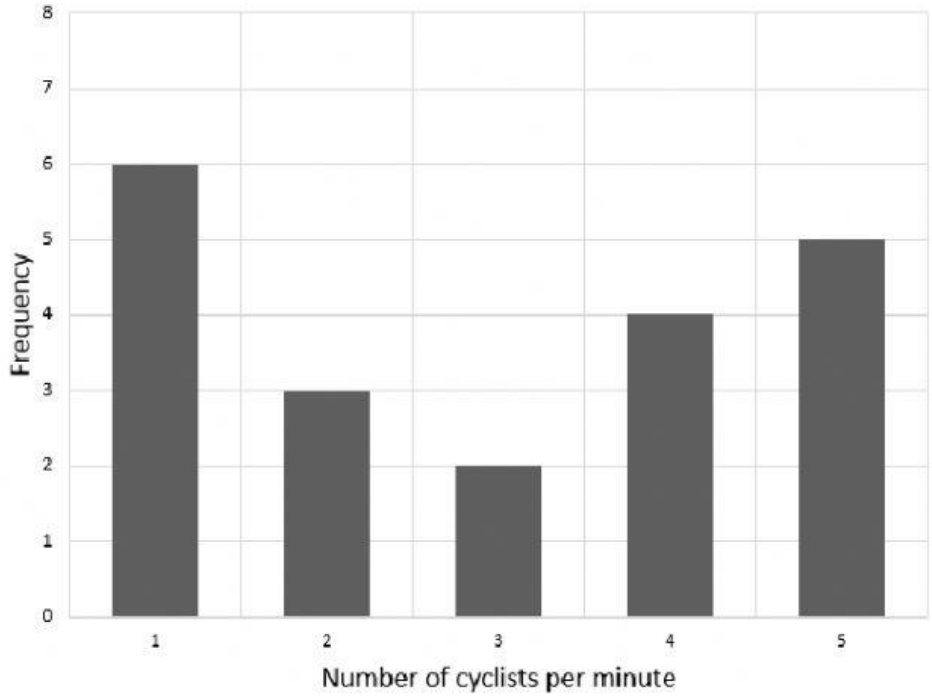
**6.** Sarah sat by the river Thames and recorded the number of cyclists that passed by every minute. She plotted a bar chart of her results.




(a) What was the largest number of cyclists to pass in one minute?

*Answer*..... *[1 mark]*

(b) What was the most frequent number of cyclists per minute?

*Answer*.....*[1 mark]*

(c) For how many minutes, in total, was Sarah recording cyclists?

*Answer*.....*[1 mark]*

Sarah now continues to count the number of cyclists for the next 3 minutes. The number of cyclists were: 1, 4, 1.

(d) Add this data to the bar chart above. *[2 mark]*

7. A gardener measures the night time temperatures over two evenings and records the results in the table shown below:

| | **Monday Temperature in degrees Centigrade** | **Tuesday Temperature in degrees Centigrade** |
|---|---|---|
| 10pm | 3 | 2 |
| 11pm | 3 | 1 |
| 12am | 2 | 1 |
| 1am | 1 | 0 |
| 2am | 0 | -1 |
| 3am | -2 | -3 |
| 4am | -1 | -1 |
| 5am | 0 | 0 |
| 6am | 1 | 2 |
| 7am | 2 | 4 |

(a) At what time and on which day was the lowest temperature recorded?

*Answer:……[1 mark]*

(b) What was the difference between the lowest and highest temperature on Tuesday?

*Answer:……°C[1 mark]*

(c) He realises his thermometer is recording incorrectly and that each temperature should be 5°C lower than was recorded. What is the correct temperature at 1am on Monday?

*Answer:……°C[1 mark]*

(d) On Wednesday the forecast is for all temperatures to drop by $3^0C$ from what they were on Tuesday. Bearing in mind his thermometer is broken, what will the actual temperature be on Wednesday at 2am?

*Answer:……°C[1 mark]*

**8.** Solve the following equations:

(a) $3x = 36$

*Answer:* $x =$ *……[1 mark]*

(b) $c + 7 = -15$

*Answer:* $c =$ *……[1 mark]*

(c) $4p - 2 = 14$

*Answer:* $p =$ *……[1 mark]*

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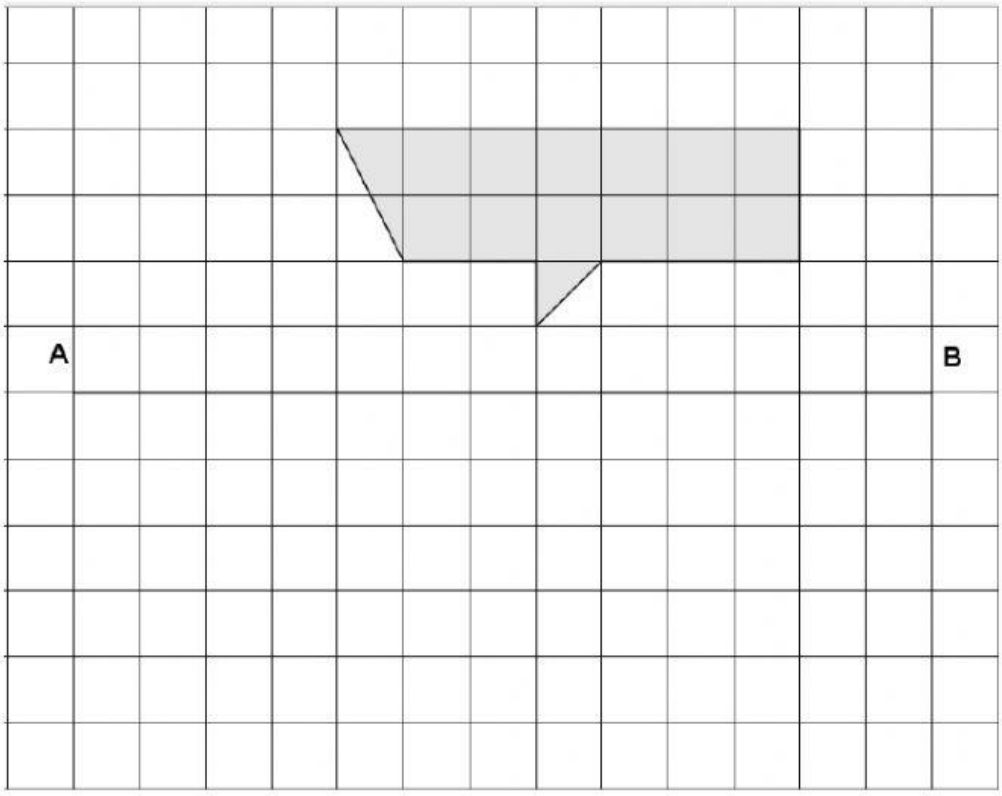
**9.** On the grid below draw the reflection of the shape shown in the mirror line AB:




*[1 mark]*

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***Turn Over!***