cea

Rewarding Learning

Centre Number

Candidate Number

**General Certificate of Secondary Education
January 2018**

Mathematics

Unit T5 Paper 1
(Non-calculator)

Foundation Tier

[GMT51]

GMT51

WEDNESDAY 10 JANUARY, 9.15am–10.15am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in black ink only. **Do not write with a gel pen.**
Answer **all sixteen** questions.
All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.
You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Questions **8(b)** and **16**.
You should have a ruler, compasses and a protractor.
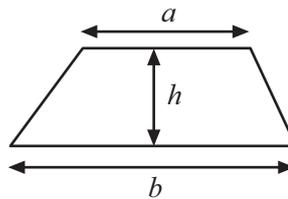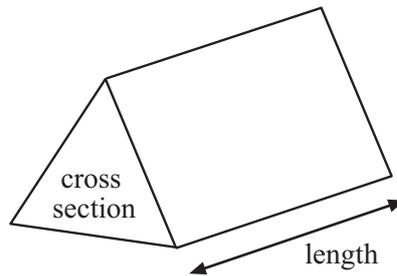The Formula Sheet is on page 2.

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16GMT5101

Formula Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$

Volume of prism $=$ area of cross section $\times$ length

16GMT5102

1 **(a)** **Estimate** the value of $355 \div 9.2$

Answer _____ [1]

(b) **Estimate** the value of 118.5×46

Answer _____ [1]

2

IT Repairs
Total charge = Callout charge of £55 + £30 per hour

Computer Fix
£52 per hour
No Callout charge

Sandra's computer needs a repair which will involve three hours' work.

Which company will charge more and by how much?

Answer _____ by £ _____ [4]

[Turn over

3

| 1 | 3 | 3 | 5 | 3 | 3 | 3 | 7 | 3 | 3 | 3 | 3 | 9 |

One number is taken at random from the list above.

Complete each of the following.

(a) It is impossible that the number taken is _____ [1]

(b) It is likely that the number taken is _____ [1]

(c) It is unlikely that the number taken is _____ [1]

(d) It is certain that the number taken is _____ [1]

4

| A | 276.9 | | B | 276.9×0.998 |

| C | 276.9×1.001 |

Without calculating the answers,

(a) which is largest, A, B or C ?   Answer _____ [1]

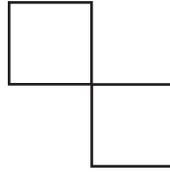**(b)** which is smallest, A, B or C ?   Answer _____ [1]

5 Reflect the triangle in the mirror line.

mirror line

[2]

6 Circle the imperial unit which is the odd one out in each list.

(a)   foot   yard   pint   mile   inch   [1]

(b)   ounce   gallon   ton   stone   [1]

[Turn over

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7 State the order of rotational symmetry for each of the shapes shown.

(a)   **(b)**   **(c)**

Answer _____ [1]   Answer _____ [1]   Answer _____ [1]

16GMT5106

8

Conversion graph: Kilometres–Miles
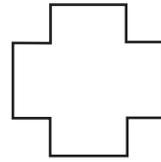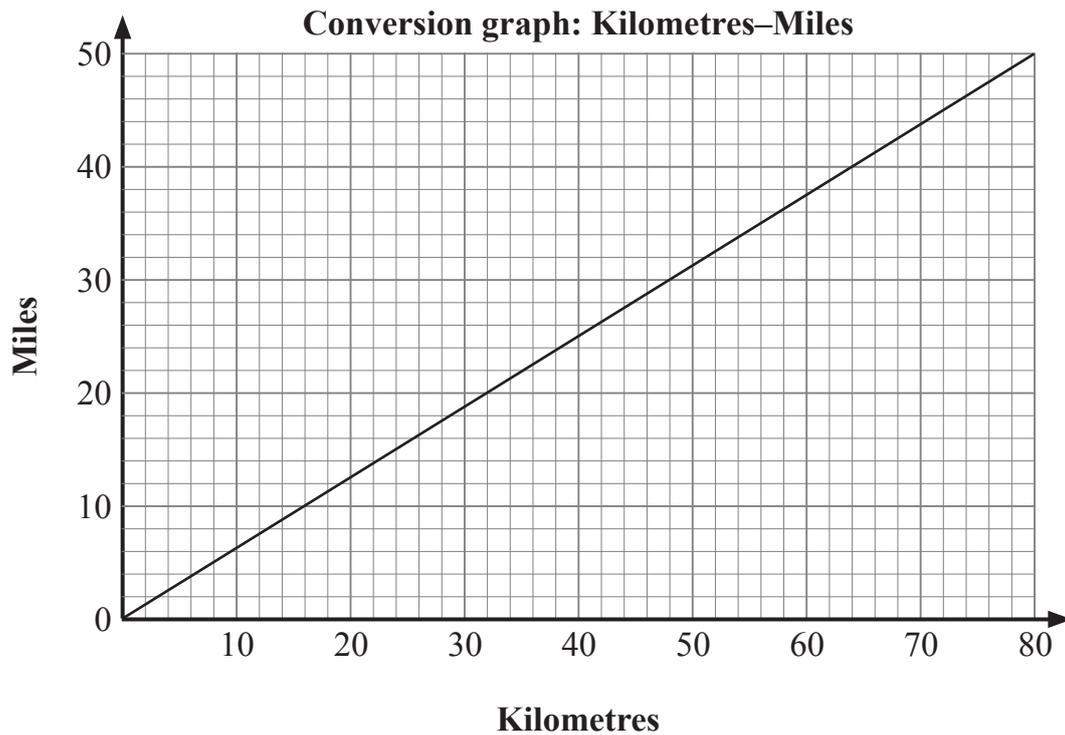

Use the graph to answer the following questions.

(a) Anita is driving at 30 miles per hour.

What is this speed in kilometres per hour?

Answer _____ km / h [1]

Quality of written communication will be assessed in this question.

(b) Jill's dad drives at 100 kilometres per hour on the motorway.

The speed limit on the motorway is 70 miles per hour.

Is Jill's dad driving over the speed limit?

Explain your answer showing clearly how you used the graph.

Answer _____

because _____ [2]

[Turn over

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16GMT5107

9 A fair dice is rolled once.

John marks the probabilities of three events happening with an arrow on the scale.

The events are: Event A   getting a number less than 5

Event B   getting an even number

Event C   getting the number 3

Write the correct letter below each of the arrows.

[3]

10 (a) Round 0.898 to 2 decimal places.   Answer _____ [1]

(b) Estimate $\sqrt{76}$

Answer _____ [1]

(c) Calculate $14 + 8 \div 2$

Answer _____ [1]

(d) Round 0.0358 to 2 significant figures.   Answer _____ [1]

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11 In Tom's pencil case there are 4 black pens and 2 blue pens.

In Paul's pencil case there are 10 pens of which 6 are black.

Tom and Paul each take a pen at random from his own pencil case.

(a) What is the probability that Tom takes a blue pen from his pencil case?

Answer _____ [1]

(b) What is the probability that Paul takes a pen which is **not** black from his pencil case?

Answer _____ [1]

(c) Who is more likely to take a black pen from his own pencil case?

Explain your answer clearly.
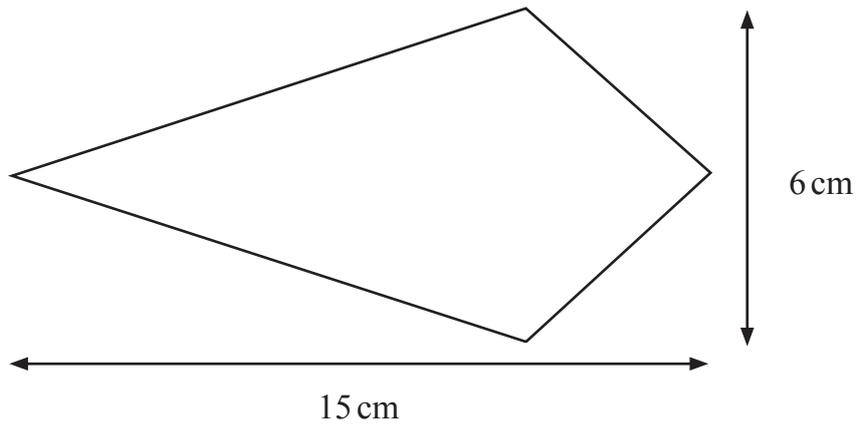
Answer _____ because _____

_____ [2]

[Turn over

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12

6 cm

diagram
not drawn
accurately

15 cm

Calculate the area of this kite.

Answer _____ cm^2 [2]

13

$$V = \frac{WX^2}{2}$$

Work out the value of V when $W = 4$ and $X = -3$

Answer $V =$ _____ [2]

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16GMT5110

14 (a)

Manager Required

Salary

£25 000–£28 000

Let 'S' stand for salary.

Write down an inequality which satisfies the salary figures given.

Answer _____ [1]

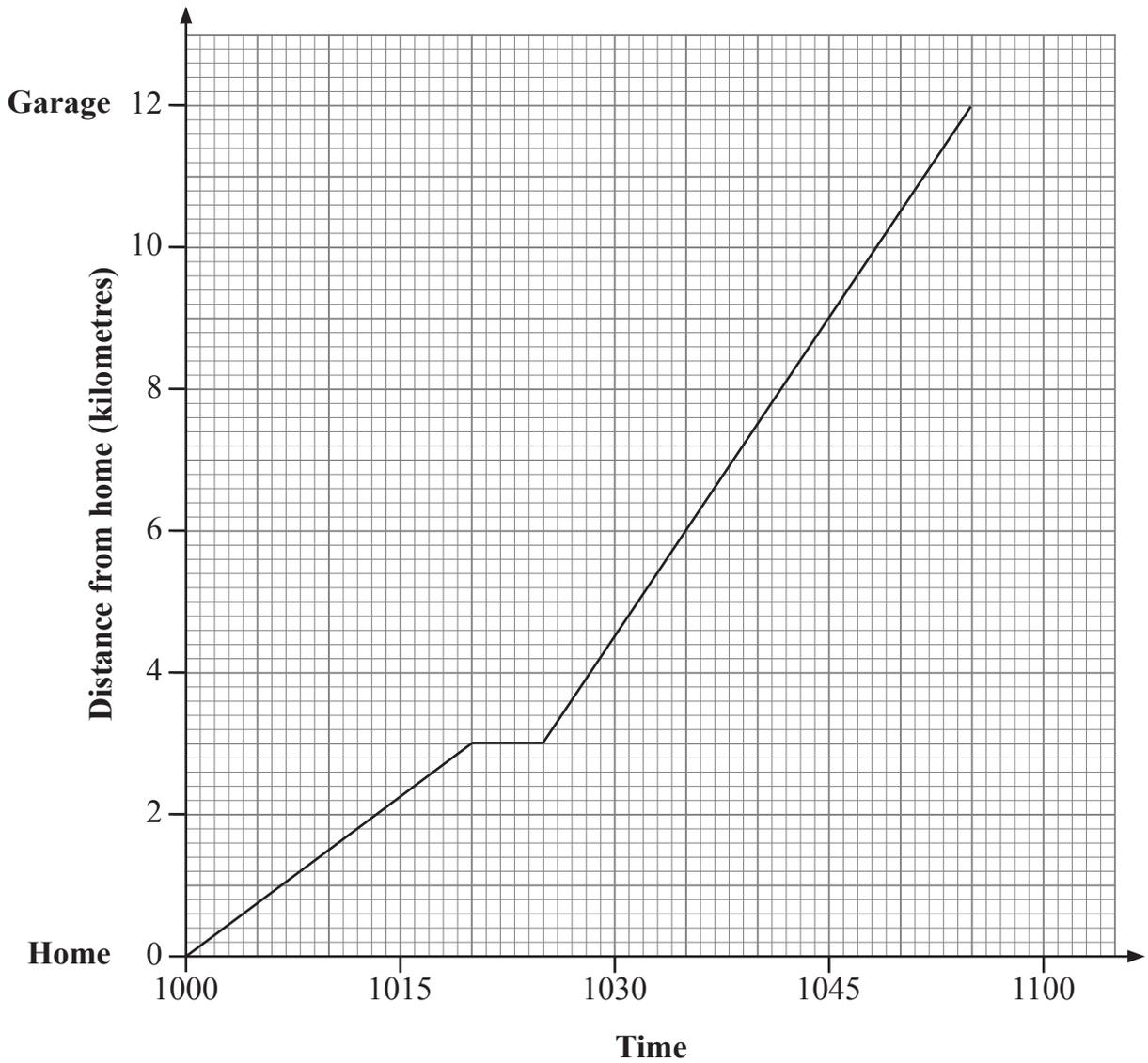**(b)** List all the possible integer values for x which satisfy the inequality

$$-3 < x \leq 1$$

Answer $x =$ _____ [1]

(c) Solve the inequality

$$2(2x - 4) > 28$$

Answer _____ [3]

[Turn over

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15 Adam jogs from home to a garage.

His journey is shown on the graph below.

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(a) What is Adam's average speed on the first part of his journey?

Answer _____ km/h [2]

(b) Adam's brother Ben leaves the garage at 1010 and cycles home at an average speed of 22 km/h.

Show Ben's journey on the graph opposite.

Hence find the time when Adam and Ben pass each other.

Answer _____ [4]

[Turn over

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16GMT5113

Quality of written communication will be assessed in this question.

16 a is an odd number and b is an even number.

Which of the statements below describes the number $(a + b)^2$?

"always even"   "always odd"   "could be even or odd"

Explain your answer.

Answer _____

because _____

_____ [2]

THIS IS THE END OF THE QUESTION PAPER

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16GMT5115

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