

- 1 State whether or not this calculation is correct.

$$18.2 \div 0.91 = 200$$

Show how you decided.

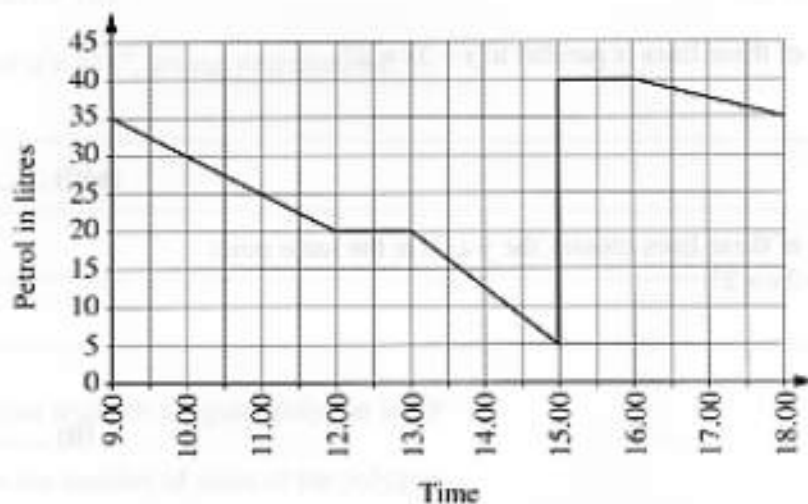
The calculation is because

.....

.....[2]

2

- 2 The graph shows how many litres of petrol are left in the tank of Alec's car during a long journey.



- (a) Work out the rate that the car was using fuel during the first three hours, stating the units.

(a) [2]

- (b) Between which times was the car using fuel at the greatest rate?

(b) Between

and [1]

3

- 3** The equation $y - 3x = 2$ represents a straight line.

(a) Rearrange the equation to make y the subject.

(a) [1]

(b) Here are the equations of three more straight lines.

$$y = -3x - 4$$

$$y = 3x - 2$$

$$y = \frac{1}{4}x + 2$$

(i) Which of these lines is parallel to $y - 3x = 2$?

(b)(i) [1]

(ii) Which of these lines crosses the y -axis at the same point as $y - 3x = 2$?

(ii) (ii)

3

- 4 (a) Calculate the reciprocal of 0.8.

(a) [2]

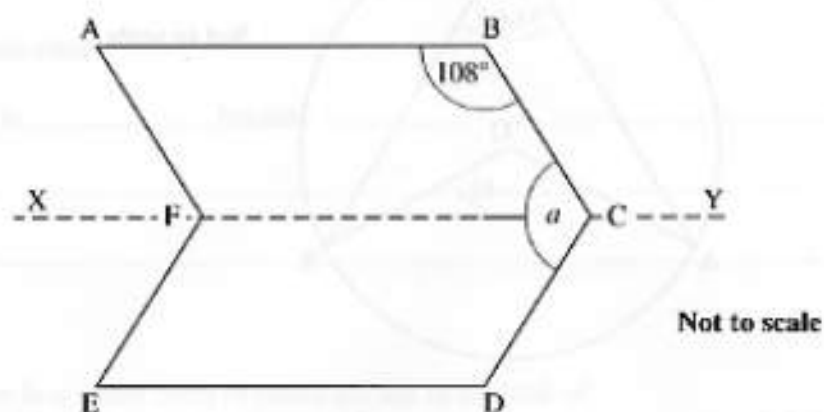
(b) Calculate $2\frac{3}{4} + 1\frac{2}{3}$.

Give your answer as a mixed number.

(b) [REDACTED] [3]

S

- 5 (a) The shape ABCDEF is made from two congruent parallelograms. XY is the line of symmetry.



Angle $ABC = 108^\circ$.

Prove that $a = 144^\circ$, giving your reasons.

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.....

..... [2]

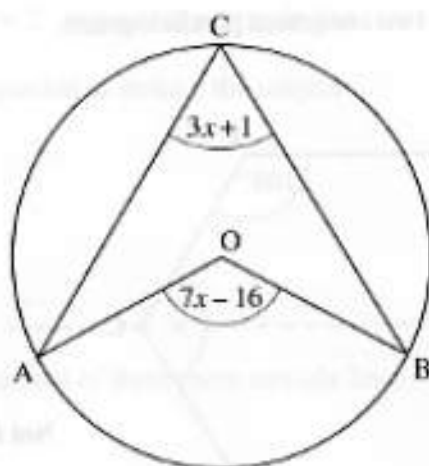
- (b) The exterior angle of a regular polygon is 40° .

Calculate the number of sides of the polygon.

(b) [2]

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|---|
| 4 |
|---|

6



Not to scale

O is the centre of the circle passing through A, B and C.

Angle $AOB = (7x - 16)^\circ$.

Angle $ACB = (3x + 1)^\circ$.

'The angle at the centre of a circle is twice the angle at the circumference.'

(a) Use this information to write an equation in x .

Solve your equation.

.....

.....

.....

.....

(a) [4]

(b) Work out angles ACB and AOB.

(b) $ACB = \dots^\circ$

$AOB = \dots^\circ$ [1]

| |
|---|
| 3 |
|---|

- 7 The lifetime of 250 Superpower batteries was tested. Here are the results.

| Lifetime | 0–1000 hours | greater than 1000 hours |
|---------------------|--------------|-------------------------|
| Number of batteries | 100 | 150 |

- (a) Use these figures to estimate the probability that one Superpower battery chosen at random will last more than 1000 hours.

(a) [1]

- (b) Playtime toy company buys 2000 Superpower batteries.

Estimate how many of these batteries will last more than 1000 hours.

(b) [2]

3

Page 10 of 10

NOT RELEVANT TO CANDIDATES

- Write your name, centre number and examination number in the space above.
- Answer all the questions.
- Write your answers in the answer boxes and the OMR bubbles using the appropriate pencil marks.
- Check your answers carefully and make sure you have used the space for the answer before you leave.
- There is a light blue area for marking. Use a blue pen to mark your answers. Do not use a pen to mark your answers in the OMR bubbles.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this section is 25.

Warning:
You are not allowed to use a calculator in Section 2 of this paper.

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

This specimen paper was used by 7 selected centres in 2008.