

Revision C F3 (End of Year Exam) [53]

1.

There are 1200 pupils in a school.

Of the 1200 pupils, 25% are in year 11.

(a) How many pupils are in year 11?

(2)

(b) Of the 1200 pupils, $\frac{2}{5}$ are boys.

How many pupils are boys?

(2)

(c) Of the 1200 pupils, 96 are girls in year 10. What percentage of the pupils are girls in year 10?

(2)

(Total 6 marks)

2.

$$S = 2p - 3q$$

(a) Work out the value of S when $p = 3$ and $q = -4$.

(b) Work out the value of p when $S = 24$ and $q = 6$.

(Total 5 marks)

3.

A unit fraction has a numerator equal to 1, for example $\frac{1}{3}$, $\frac{1}{7}$ and $\frac{1}{25}$.

Unit fractions can be written as the sum of two different unit fractions, for example

$$\frac{1}{2} = \frac{1}{3} + \frac{1}{6}$$

Write each of the following unit fractions as the sum of two **different** unit fractions.

$$\frac{1}{4} = \frac{1}{\square} + \frac{1}{\square}$$

$$\frac{1}{5} = \frac{1}{\square} + \frac{1}{\square}$$

$$\frac{1}{6} = \frac{1}{\square} + \frac{1}{\square}$$

[3]

(Total 3 marks)

4.

Find an approximate value of

$$\frac{584 \times 4.91}{0.198}$$

You **must** show all your working.

(Total 3 marks)

5.

(a) Simplify

(i) $\sqrt{3} + \sqrt{3}$

(1)

(ii) $\sqrt{3} \times \sqrt{3}$

(1)

(b) Show that $\frac{\sqrt{75} - \sqrt{12}}{\sqrt{75} + \sqrt{12}}$ simplifies to $\frac{3}{7}$

(3)

(Total 5 marks)

6.

Solve these equations.

(a) $\frac{x}{2} = 12$

(1)

(b) $3y - 11 = 4$

(2)

(c) $4z + 8 = 3 - z$

(3)

(d) $\frac{2t+5}{3} = 7$

(3)

(Total 9 marks)

7. **Non-calculator**

(a) Write 0.000 000 397 in standard form.

(1)

(b) Evaluate $500 \times 30 \times 10^8$

Give your answer in standard form.

(2)

(c) Evaluate $\frac{6 \times 10^7}{8 \times 10^{11}}$

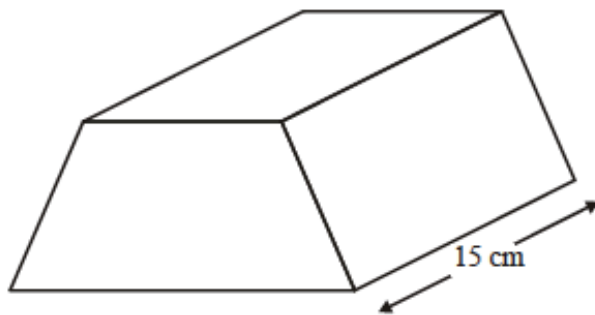
Give your answer in standard form.

(2)

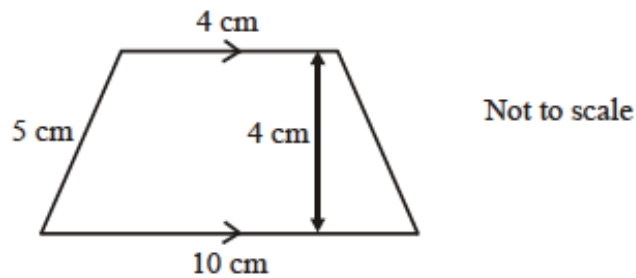
(Total 5 marks)

8.

The diagram shows a silver bar.



The cross-section of the silver bar is a trapezium.



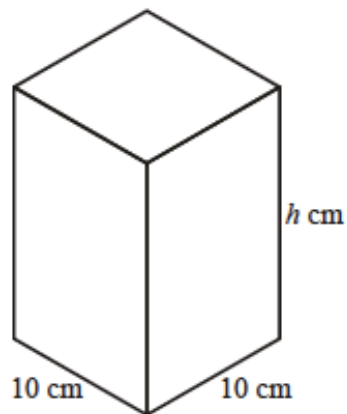
(a) Calculate the area of the cross-section.

(2)

(b) The silver bar is 15 cm long.

The bar is melted and the silver is then made into a cuboid.

The base of the cuboid is 10 cm by 10 cm.



What is the height, h , of the cuboid?

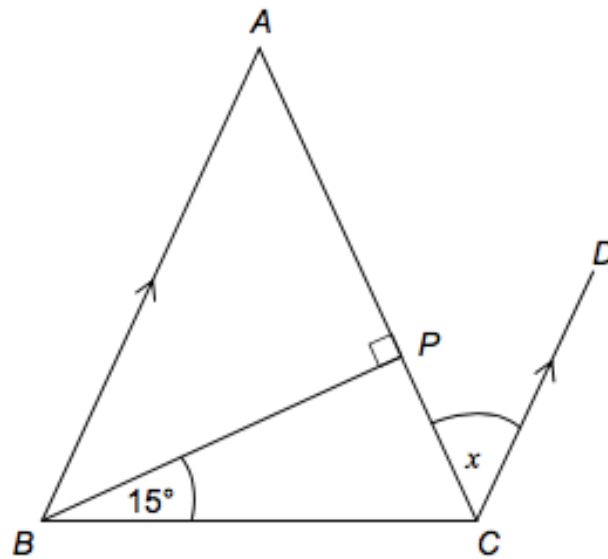
(3)
(Total 5 marks)

9.

ABC is a triangle with $AB = AC$

BA is parallel to CD .

Not drawn accurately

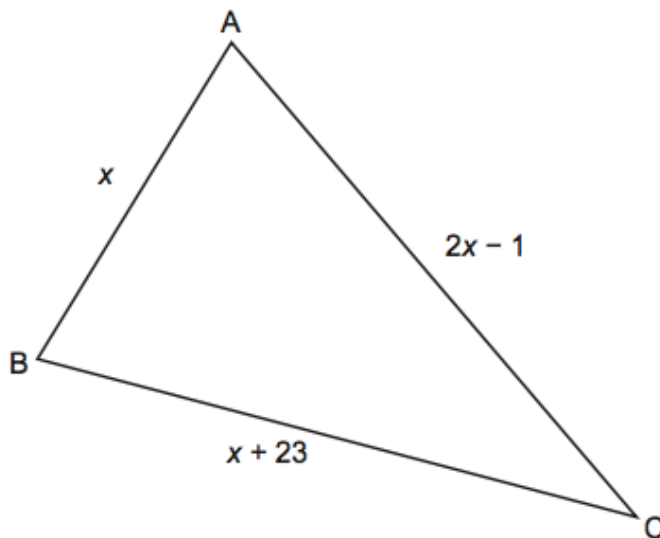


Show that angle $x = 30^\circ$

[3 marks]

10.

Triangle ABC has sides x , $x + 23$ and $2x - 1$.



Not to scale

(a) Verify that, for $x = 33$, triangle ABC is right-angled.

[3]

(b) Show that there is only one value of x which makes triangle ABC isosceles.

[6]

(Total 9 marks)