BLOCK 5 TEST

NAME	TOTAL MARKS	PERCENTAGE

Calculators may be used.

TUTORS & FUTURES
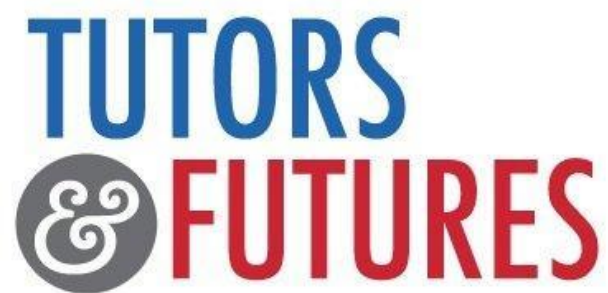
1. There are 5 red pens, 3 blue pens and 2 green pens in a box.

Gary takes at random a pen from the box and gives the pen to his friend.
Gary then takes at random another pen from the box.

Work out the probability that both pens are the same colour.

…………………………..
(Total 4 marks)

2. A company bought a van that had a value of £12000.
Each year the value of the van depreciates by 25%.

Work out the value of the van at the end of three years.

…………………………..
(Total 3 marks)

3. A number y is rounded to 2 decimal places.
The result is 1.26.

Write down the error interval for y.

……………………………..
(Total 2 marks)

4. A plane flies 1400 kilometres in 2 hours 20 minutes.

Calculate the average speed, in km/h, of the plane.

……………………………..
(Total 3 marks)

5. Solve the simultaneous equations

$$3x + 2y = 4$$
$$4x + 5y = 17$$

x =……………………….
y =……………………….
(Total 4 marks)

6. Sami asked 60 people which sports they liked from rugby, football and cricket.

8 people like all three sports.
17 people like rugby and football.
13 people like football and cricket.
19 people like rugby and cricket.
35 people like football.
27 people like cricket.
30 people like rugby.

How many people liked neither rugby or football or cricket?

....

(Total 4 marks)

7. (a) Expand and simplify $(p + 7)(p – 8)$

....

(Total 2 marks)

(b) Factorise $x^2 - 169$

....

(Total 2 marks)

8.
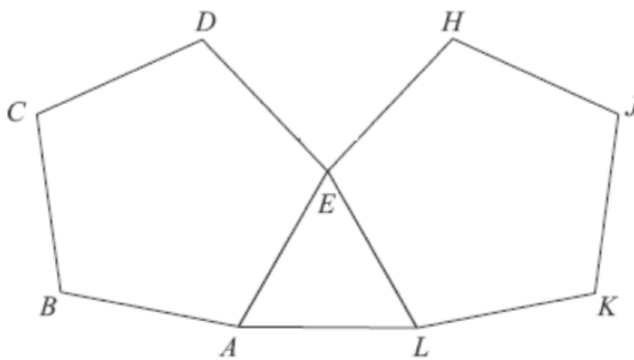

Diagram **NOT**
accurately drawn

ABCDE and EHJKL are regular pentagons.
AEL is an equilateral triangle.

Work out the size of angle DEH.

....

(Total 4 marks)

9. A silver chain has a volume of $5cm^3$.
The density of silver is 10.5 grams per cm^3.
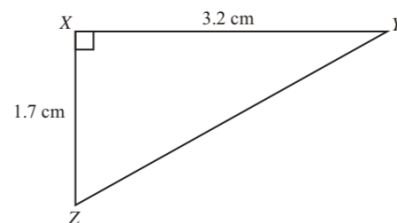
Work out the mass of the silver chain.

....

(Total 2 marks)

10.

XYZ is a right-angled triangle.

Calculate the length of YZ.
Give your answer correct to 3 significant figures.

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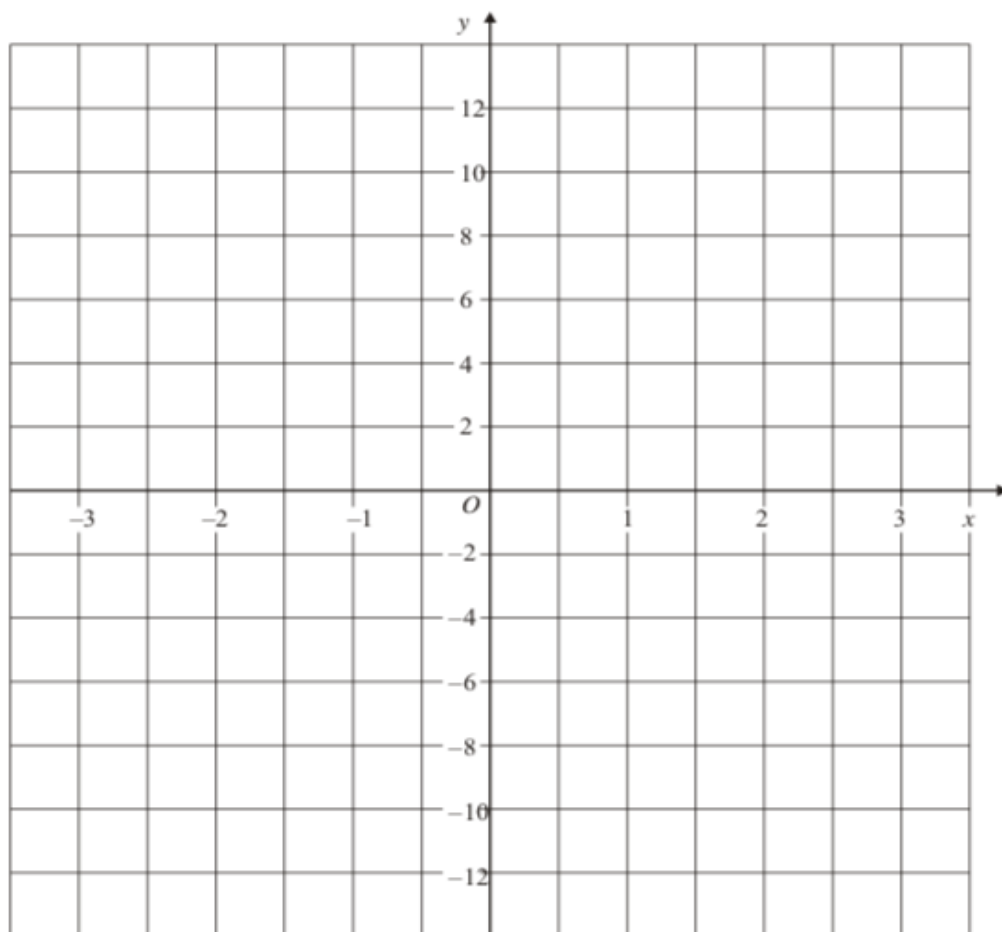
(Total 3 marks)

11. (a) Complete the table of values for $y = x^3 + x - 2$

x	−2	−1	0	1	2
y	−12			0	

(Total 2 marks)

(b) On the grid, draw the graph of $y = x^3 + x - 2$

(Total 2 marks)

12. (a) Write the number 0.00037 in standard form.

....

(Total 1 mark)

(b) Write 6.43×10^{5} as an ordinary number.

....

(Total 1 mark)

(c) Work out the value of $(2.1 \times 10^{8}) \times (6 \times 10^{-5})$.
Write your answer in standard form.
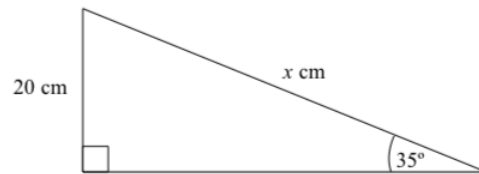
....

(Total 2 marks)

13. A 20 Pound note is a rectangle 133 mm long and 72 mm wide.
A 50 Pound note is a rectangle 160 mm long and 82 mm wide.

Show that the two rectangles are not mathematically similar.

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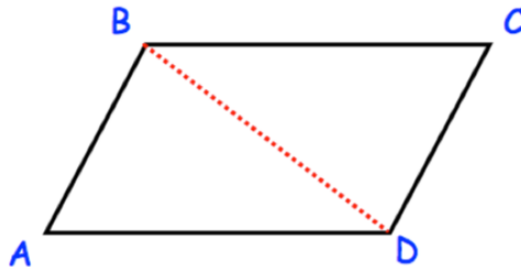
(Total 3 marks)

14.

20 cm

x cm

35°

Work out the value of x.

....

(Total 2 marks)

15. ABCD is a parallelogram.

B   C

A   D

Prove that triangles ABD and BCD are congruent.

....

(Total 4 marks)