Test 3 **Essential Maths 8C Units 5 and 6/Year End**

You need: Protractor, ruler, compasses and tracing paper Calculators may be used

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1. On a holiday in Spain Susie exchanged £25 for 30 euros.

   How many euros could she get for £40? (2 Marks)

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2. The scale of a map is 1:200000.

   On the map the distance between two schools is 8 cm.

   What is the actual distance in kilometres between the two schools? (2 Marks)

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3. You are given that $x = -3$ and $y = 4$.

   Find the value of each expression below.

   (a) $2x + y$ (1 Mark)

   (b) $x^2 - 3y$ (2 Marks)

   (c) $y - x$ (2 Marks)

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4. Andrew has **five** dice, each **numbered 1 to 6**

   He throws the five dice and the **total** score is **24**

   Three of the dice show the **same number** as each other.

   The other **two** dice show the **same number** as each other.

   What numbers could Andrew have thrown?

   Give two possible answers. (2 Marks)

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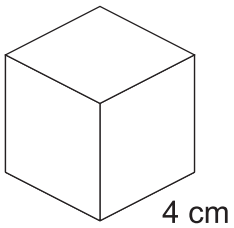
5. (a) Change $\frac{3}{20}$ to a percentage. (1 Mark)

   (b) One litre of petrol costs 90 pence.

   Calculate the new price after a price rise of 5%. (2 Marks)

6. The diagram shows a cube of side 4 cm.



(a) How many faces has the cube? (1 Mark)

(b) How many edges has the cube? (1 Mark)

(c) What is the volume of the cube? (1 Mark)

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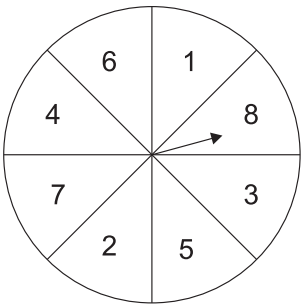
7. The diagram shows a spinner with 8 equal sectors.



Find the probability of

(a) Spinning a 3 (1 Mark)

(b) Spinning an even number (1 Mark)

(c) Spinning a number greater than 6 (1 Mark)

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8. Use a calculator to work out the following

(a) $\dfrac{4.2^2 - 5.6}{0.2}$ (2 Marks)

(b) $\dfrac{(138.5 - 78.1) \times 1.25}{138.5 - (78.8 \times 1.25)}$ (2 Marks)

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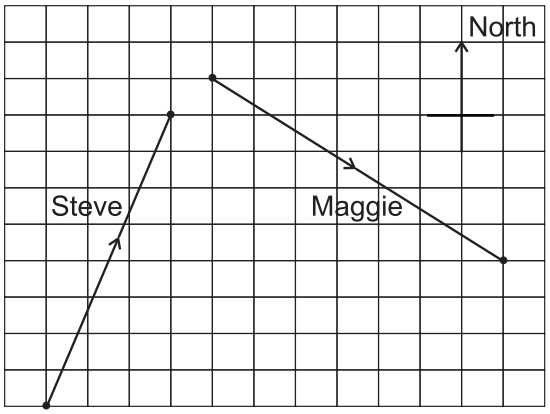
9. Measure the bearing on which each person is moving. (2 Marks)



10. Solve the questions to find n in each case.

(a) $5n + 3 = 15 - 3n$ (1 Mark)

(b) $5(n - 2) = 3(n + 2)$ (2 Marks)

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11. Look at the sequence which starts

4, 7, 10, 13, …

(a) Write down the fifth term in the sequence. (1 Mark)

(b) Write down the 20th term in the sequence. (1 Mark)

(c) Find an expression, using n, for the n th term in the sequence. (2 Marks)

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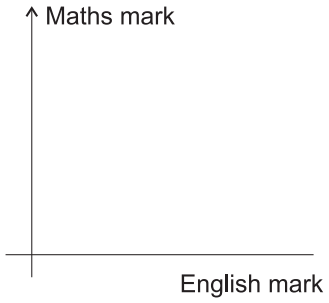
12. The table below shows the marks of 10 students in an English test and a Maths test.

English	74	60	40	80	52	66	50	84	58	70
Maths	70	62	44	76	54	56	46	70	56	64

(a) Using squared paper, plot the marks on a scatter graph. (2 Marks)

(b) Describe the **correlation**, if any, between the sets of marks. (1 Mark)



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13. A lorry can carry a maximum load of 6.2 tonnes.
A customer requires parcels of books and each parcel weighs 35 kg.
How many parcels can the lorry carry? (2 Marks)

[1 tonne = 1000 kg]

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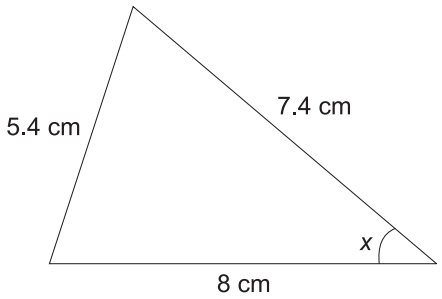
14. Draw an accurate full size triangle as shown.

Measure the angle marked x. (3 Marks)



15. Copy each statement and fill in the missing numbers.

(a) $\frac{4}{5} - \square = \frac{1}{10}$ (2 marks)

(b) $-3 + \square - 4 = -11$ (2 marks)

(c) $8.2 \div \square = 82000$ (2 marks)

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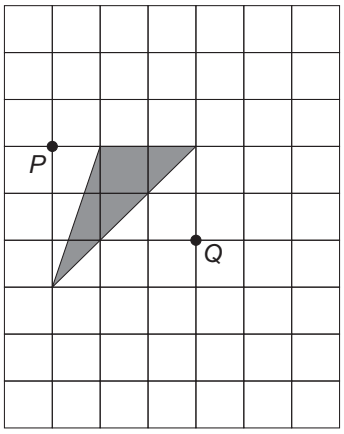
16. (a) Draw the shaded triangle on squared paper.



(b) Rotate the triangle 90° anticlockwise around the point *P*.

Draw the triangle in its new position and label it triangle *B*. (1 Mark)

(c) Rotate the shaded triangle 90° clockwise around the point *Q*. Draw the triangle in its new position and label it triangle *C*. (1 Mark)

(d) Describe fully the rotation which maps triangle *B* onto triangle *C*. (2 Marks)

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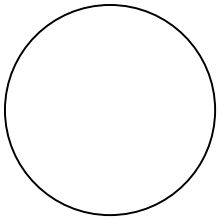
17. The **radius** of a two pounds coin is **1.4 cm**.

Calculate the **area** of the face of the coin. (2 Marks)



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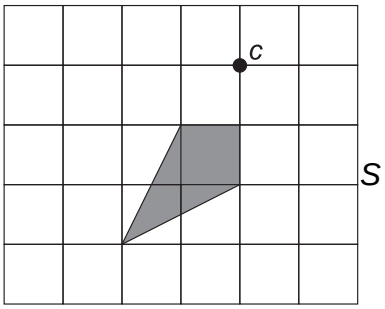
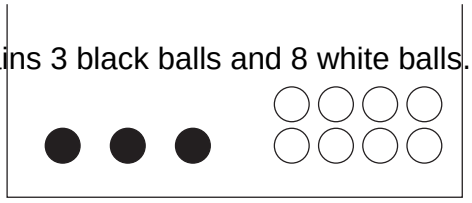
18. Draw a copy of the diagram on squared paper.

Draw an enlargement of shape *S* with scale factor 3 and centre of enlargement **c**. (2 Marks)



19. A box contains 3 black balls and 8 white balls.



One ball is selected at random.

(a) Find the probability of selecting a black ball. (1 Mark)

(b) One more black ball and one more white ball are placed in the box.

Find the probability of selecting a white ball from the box now. (2 Marks)

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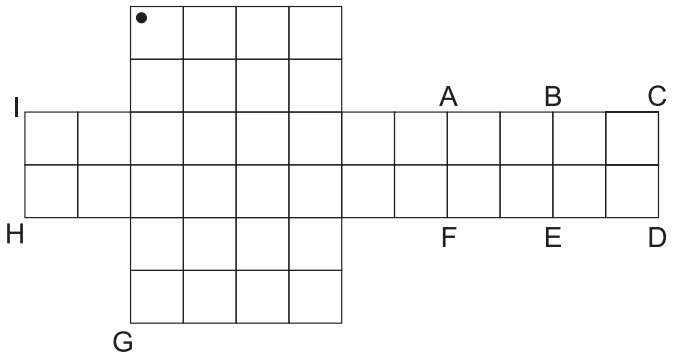
20. The diagram shows a net for a cuboid. The side of each small square is 2 cm long.



(a) What is the volume of the cuboid? (2 Marks)

(b) When the net is folded two other corners will meet the corner marked with a dot (•). Use two of the letters A, B, … I to state which corners will meet the corner with a dot. (1 Mark)

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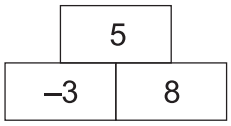
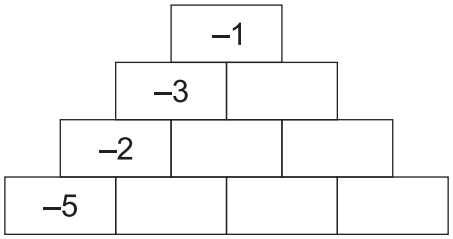
21. In this number wall each brick is made by adding the two bricks underneath it.

For example





Copy and complete the wall. (3 Marks)