

**1st year end of year
Mathematics assessment
Non-Calculator**

Paper 2

Name: _____

Teacher: _____

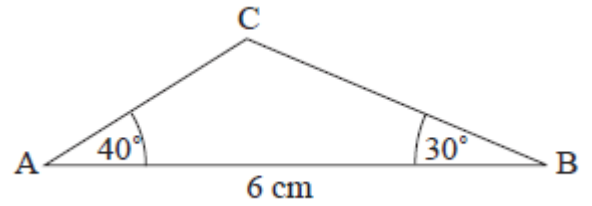
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Time allowed: 45 minutes

You must show all your working out.

Section A – mastery (30 marks)

1. a) Construct the triangle shown opposite in the space below.



- b) Measure the length of the side AC.

Answer: **cm** (4 marks)

2. A bag contains 30 balls, each marked with a different number from 1 to 30. A ball is chosen at random from the bag. Giving your answers as either a fraction in their simplest form, find the probability that the ball is:

- a) an odd number
- b) a prime number
- c) a multiple of 7
- d) a factor of 20

(4 marks)

3. Convert $\frac{5}{8}$ to a decimal.

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Answer: (2 marks)

4. Calculate:

a) $5.2 - 2.8$

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b) 4.05×10

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c) $8.24 \div 20$

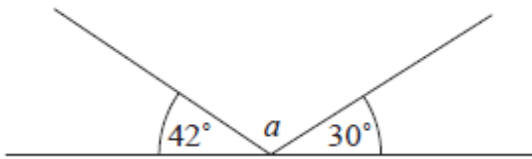
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d) $1581.3 \div 9$

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(7 marks)

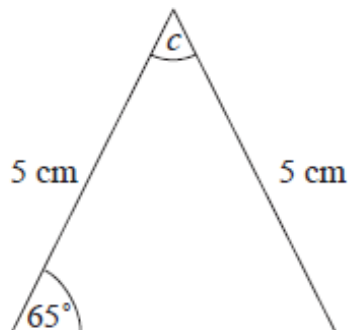
5. Calculate the unknown angle in each diagram below, giving reasons for your answers:



Angle a = because

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(2 marks)



Angle c = because

.....

(3 marks)

6. Simplify:

a) $3p + 4p - 12p$

.....
.....

Answer:

b) $6m + 2n - 7 - 4m + 3n - 3$

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.....

Answer: (4 marks)

7. Solve the following equations. You must show all your working out:

a) $2x + 1 = -9$

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Answer: $x =$ (2 marks)

b) $p + 3 = 3p - 7$

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Answer: $p =$ (2 marks)

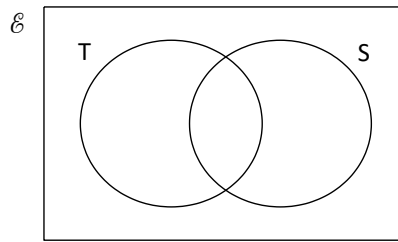
Section B- Problem-solving (20 marks)

8. The area of a rectangle is $1\frac{1}{8} \text{ m}^2$. One side of the rectangle is $1\frac{1}{2} \text{ m}$ long. Find the length of the other side.

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Answer: metres (5 marks)

9. A sports club has 50 members. 33 like tennis, 20 like tennis and squash, while 11 like neither. How many like squash? Complete the Venn diagram then use it to answer the question.



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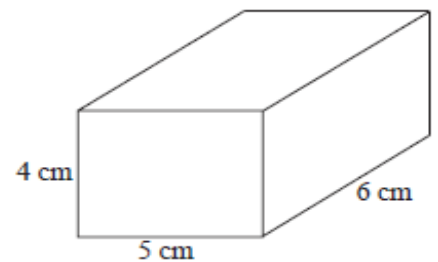
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(3 marks)

10. Felicity is packing packets of soap powder into a box. Opposite is a diagram of a packet of soap powder. How many packets of soap powder will fit into the box altogether? The box measures 30cm x 24cm x 28cm.



Soap Powder

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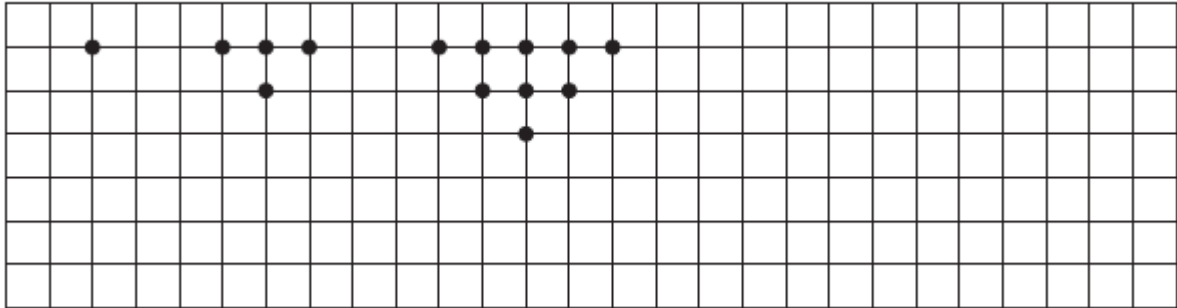
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Answer:

(4 marks)

11. The diagrams on the grid below have been made using dots.



a) Draw the 4th diagram in the pattern on the grid above. (1 mark)

b) How many dots will be needed for the 5th diagram?

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Answer: (1 mark)

c) A different sequence begins 10, 6, 2, -2,

Find an expression for the n th term of this sequence.

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Answer: (3 marks)

12. A batsman has a mean of 46 runs in his last nine innings. He will get a place in the England team if his mean is at least 50 after his next innings. How many runs must he score in his next innings?

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Answer: (3 marks)