Name _____

Teacher _____

2nd Year Mathematics

End of year assessment

Paper 2

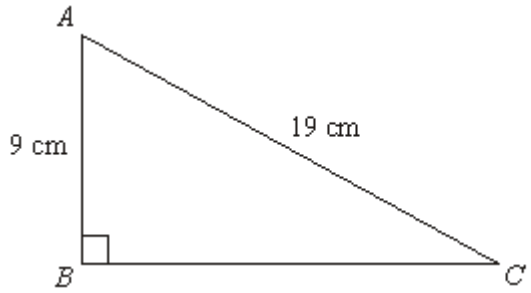
Calculator allowed

Time allowed: 1 hour

Remember to show all your working out clearly

Mastery

1. *ABC* is a right-angled triangle.
AC = 19 cm and *AB* = 9 cm.



Not to scale

Calculate the length of *BC*.

.....

.....

.....

.....

Answer: ……..cm

(Total 3 marks)

2. Round a) 24.349 to 1 decimal place

……...

b) 4.008 to 2 decimal places

……..

c) 763000 to 1 significant figure

……

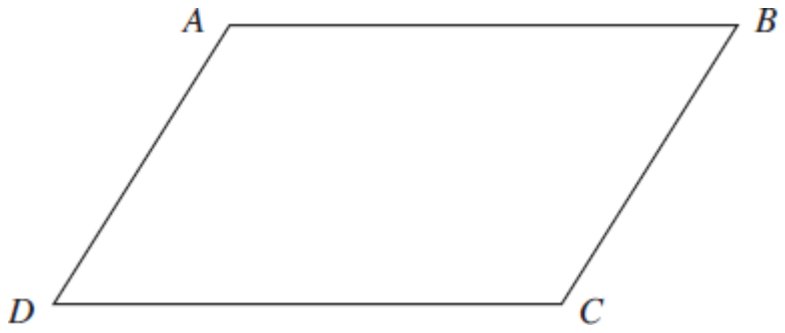
d) 0.00062549 to 3 significant figures

…….. **(Total 4 marks)**

3. Write the ratio 4 : 24 in the form 1 : n

……. **(Total 1 mark)**

4. Here is a parallelogram.



Tick a box to show whether each statement is true or false.

	True	False
AB is parallel to *DC*	☐	☐
Angle *A* = Angle *C*	☐	☐
The parallelogram has 2 lines of symmetry.	☐	☐
The parallelogram has rotational symmetry of order 2.	☐	☐

(Total 4 marks)

5. a) Expand $a(a-2b)$

……

(2)

b) Expand and simplify $(x+7)(x-3)$

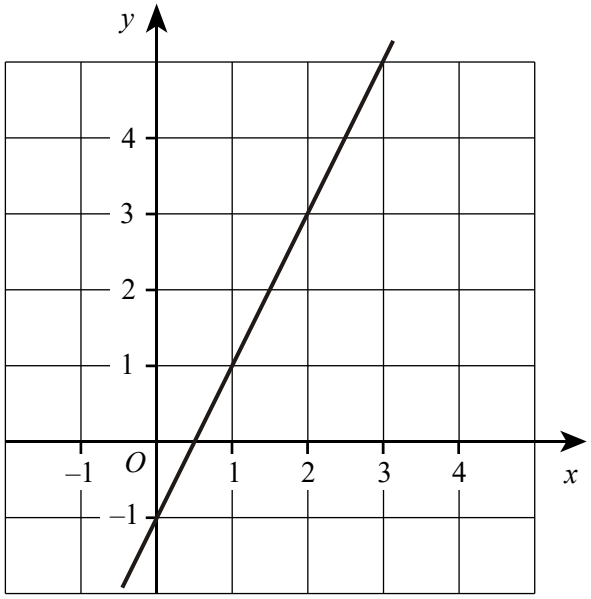
……

……(2)

Answer:

(Total 4 marks)

6. (a) The diagram shows the graph of the line $y = ax + b$



Find the values of a and b.

.....

.....

Answer a = ... , b = ...

(3)

(b) Write down the equation of any line that is parallel to this line.

.....

(1)

(c) Write down the equation of any line that has a steeper gradient than this line.

.....

(1)

(Total 5 marks)

7. Make x the subject of each of the following formulae:

a) $t = 4x + 5$

Answer:

(2)

b) $t = \frac{x}{3} - m$ Answer:

(2)

(Total 4 marks)

8. Find the equation of the straight line that joins the points with coordinates (-2 , 10) and (6, 26).

Answer:

(Total 4 marks)

9. In a sale, the price of a toy is reduced from £15 to £11.

Calculate the percentage reduction in price. Give your answer to 1 decimal place.

……

……

……

……

Answer……..%

(Total 3 marks)

10. Complete the formula for each of the following.

The area, A (cm^2), of a square of side x (cm) is A = ...

The volume, V (cm^3), of a cube of side y (cm) is V = ...

(2 marks)

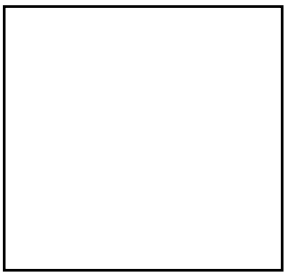
Problem Solving

11. £65000 is shared out between Daisy, Paul and Joe. Daisy gets 22%, Paul gets $\frac{3}{10}$ of the money and Joe receives what is left. How much does Joe receive?

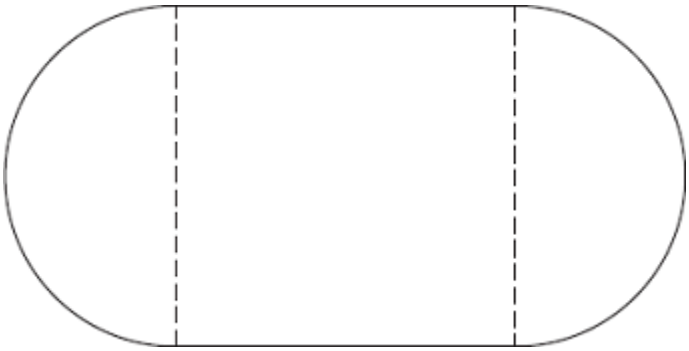
Answer: £

(Total 3 marks)

12. The perimeter of this square is 48 cm.



Semicircles are joined to two sides of the square.



Work out the perimeter of this new shape.

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.....

Answer: ……..……cm

(Total 4 marks)

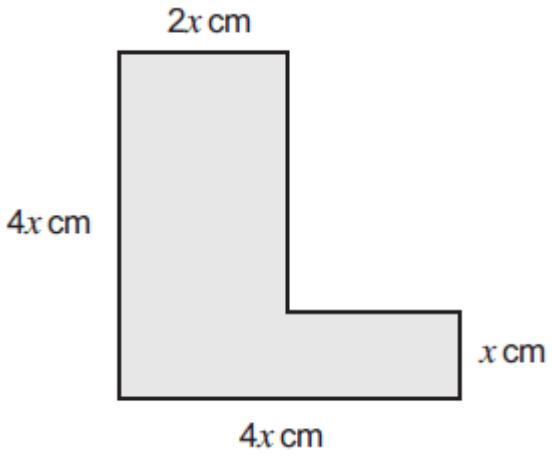
13. The interior angle of a regular polygon is 100° larger than its exterior angle. How many sides does the polygon have?

Answer:

(4 marks)

14. The perimeter of this L-shape is 40 cm.

Not drawn accurately



Set up and solve an equation to work out the value of *x*.

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.....

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x = ...

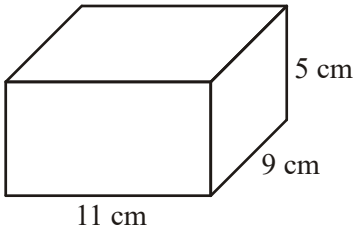
(Total 4 marks)

15. The circumference of a circle is 49mm. Calculate the radius of the circle to 1 decimal place.

Answer: mm

(Total 3 marks)

16. (a) A cuboid is 11 cm long, 9 cm wide and 5 cm high.



Not to scale

Calculate the volume of this cuboid.

.....

.....

Answer ..... cm^3

(2)

(b) Calculate the total surface area of this cuboid.

.....

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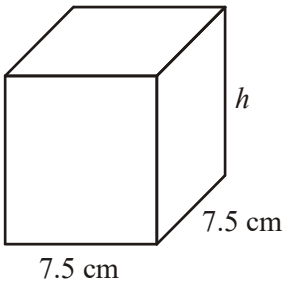
.....

Answer ..... cm^2

(3)

(c) A second cuboid has the **same** volume and a square base of side 7.5 cm.



Not to scale

Calculate the height of the second cuboid (marked *h* on the diagram).

.....

.....

.....

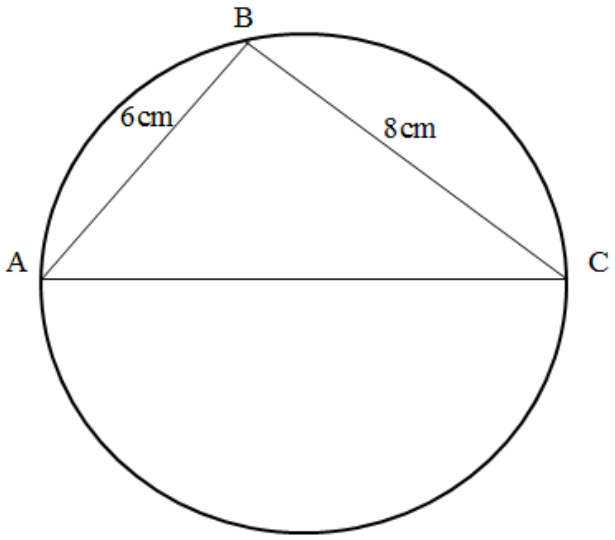
Answer ..... cm

(2)

(Total 7 marks)

17. In the diagram below, AC is the diameter of the circle.
Angle ABC is a right angle.
AB is 6cm and BC is 8cm.

Find the area of the circle, giving your answer to 1 decimal place.



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Answer: ……..…cm^2

(Total 4 marks)

18. Find five positive integers that have a range of 5, mode of 6, median of 6 and mean of 7.

Answer:

(3 marks)

END OF TEST