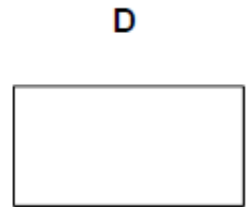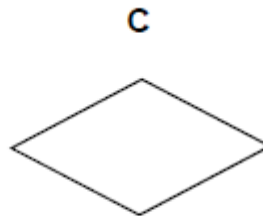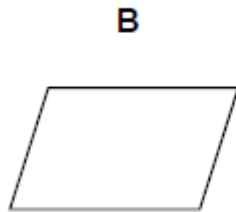**Q1.**

A company's logo

- is a pentagon
- has exactly one line of symmetry
- has sides with whole number lengths
- has a perimeter of 15 cm

Draw a sketch of a possible logo.

Label each side with its length.

(Total 2 marks)

Q2.

Which shape has **two** lines of symmetry **and** its diagonals intersecting at 90°?

Circle the correct letter.

A	B	C	D

(Total 1 mark)

Q3.(a)   Draw a circle with **diameter** 12 cm, centre *P*.
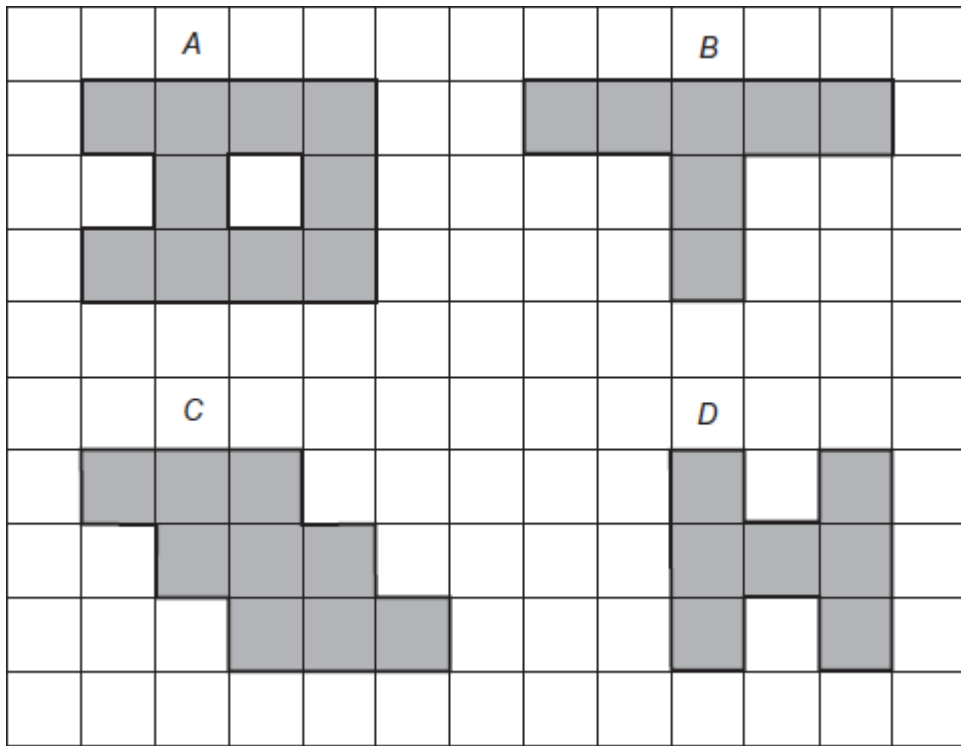
• *P*

(2)

(b)   On your circle draw a sector of angle 60°

(2)
(Total 4 marks)

Q4. Here are four shapes.

Circle your answers for each part.

(a)   Which of these shapes have line symmetry?

A   B   C   D
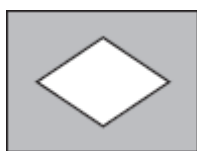
(2)

(b)   Which of these shapes have rotational symmetry of order 2?
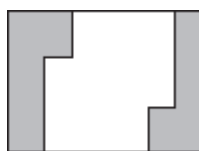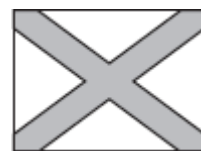
A   B   C   D

(2)
(Total 4 marks)

Q5. Here are five flags.
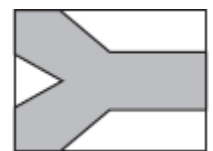
A   *B*   *C*   *D*   *E*

(a)   Which **three** flags have line symmetry?

Answer .... , ... and ....

(2)

(b)   Which **two** flags do **not** have rotational symmetry?

Answer.. and ....

(2)

(c)   Which flag has rotational symmetry but **not** line symmetry?

Answer ....

(1)
(Total 5 marks)

Q6.
(a)   Draw a line **parallel** to the line below.

_____

(1)

(b)   Draw a line **perpendicular** to the line below.

_____

(1)
(Total 2 marks)

Q7.
(a)   Shade in **one** more square so that the shape has one line of symmetry.

(1)

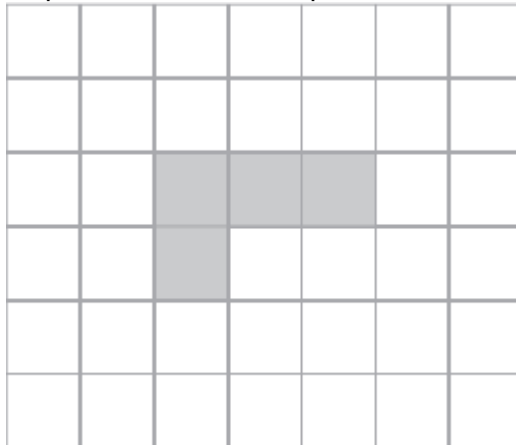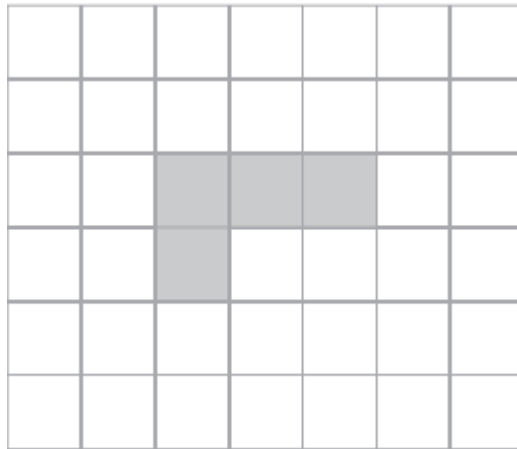(b)   Shade in **one** more square so that the shape has a **different** line of symmetry.

(1)

(c)   Shade in **one** more square so that the shape has rotational symmetry of order 2
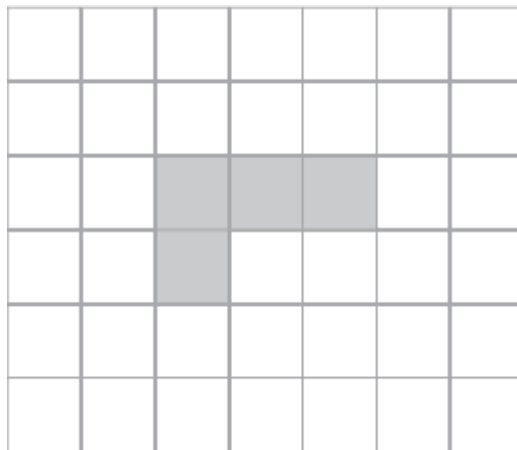
(1)
(Total 3 marks)

Q8.

(a)   Lilly rolls four ordinary six-sided dice.

She records the numbers rolled.

The mode of the numbers is one more than the median.

Work out a possible set of four numbers she could have rolled.

....

....

....

Answer ....

(2)

(b)   Meg has one ordinary six-sided dice.
She rolls it 50 times and records each score in this table.

Score	Frequency	
1	10	
2	7	
3	9	
4	5	
5	8	
6	11	

Work out the mean score.

....

....

....

Answer ....
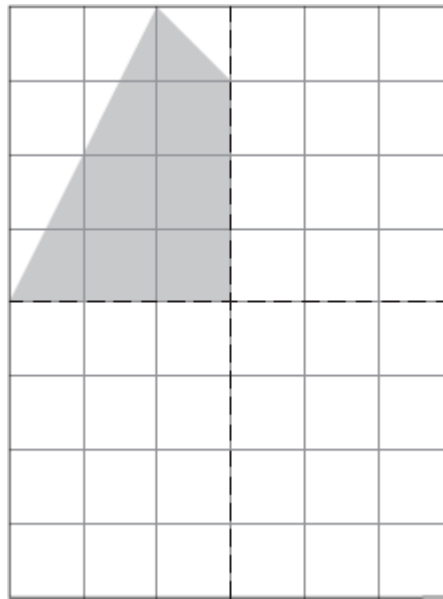
(3)
(Total 5 marks)

Q9.

Salim is making a design on a centimetre grid.

(a)   The design is incomplete.
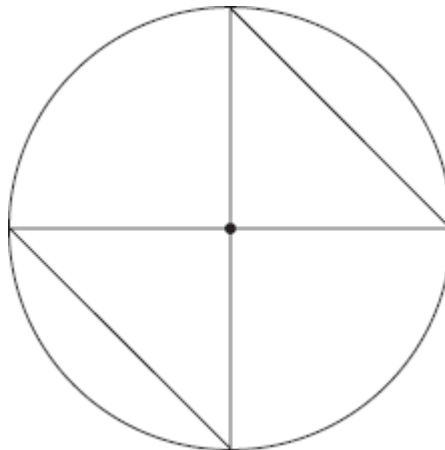The dashed lines are lines of symmetry.

Complete the design.

(2)

(b)   Show that Salim can print 6 of these designs on a rectangular piece of paper that measures 25 cm by 15 cm
You may use drawings to help explain your answer.

(2)
(Total 4 marks)

Q10.
A company logo is a circle with two right-angled triangles drawn inside.
The centre of the circle is marked with a dot.

(a)   Write down the order of rotational symmetry of the logo.

Answer ....

(1)

(b)   Measure the diameter of the circle.
State the units of your answer.

Answer ....
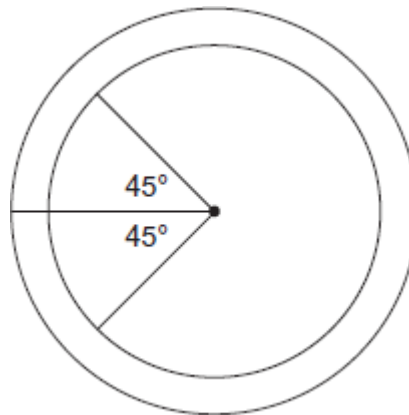
(2)
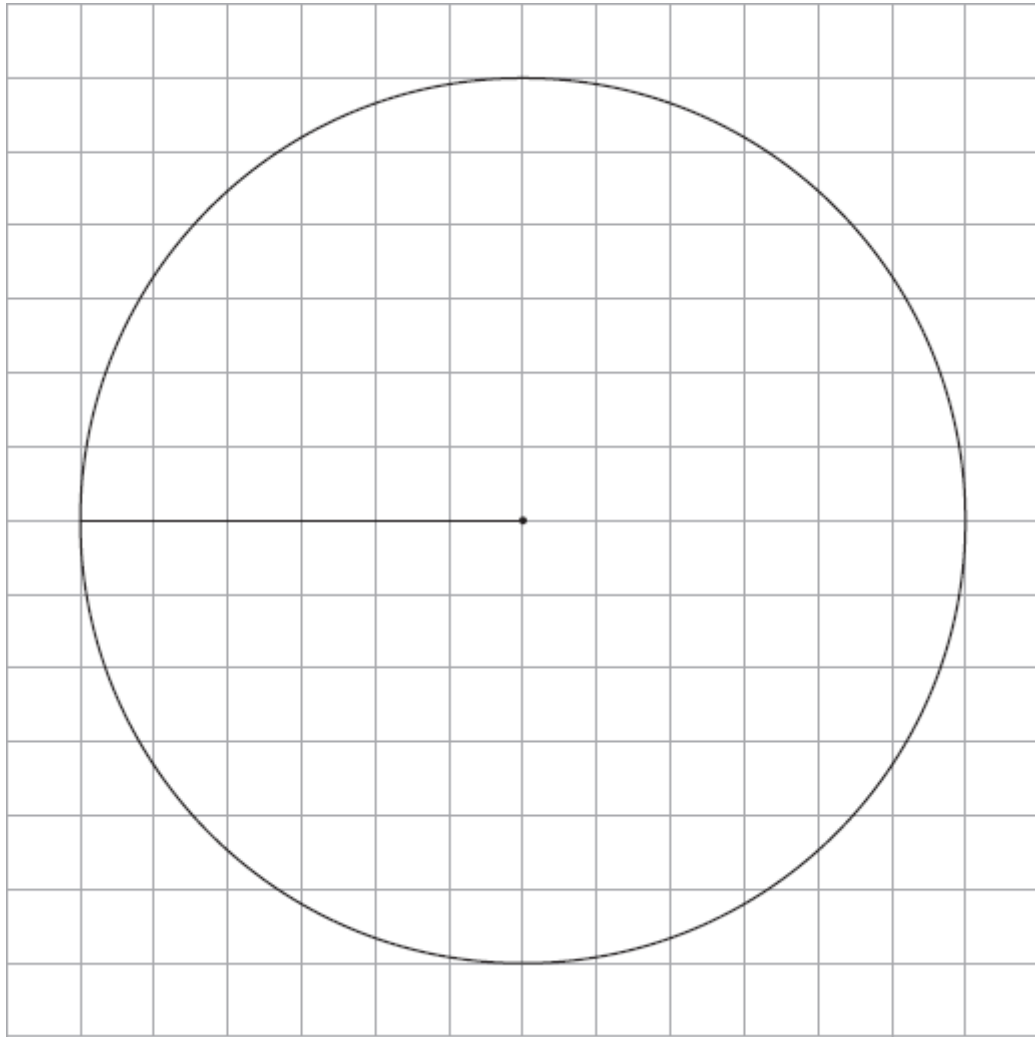
(c)   A different logo has

- **two** circles, radii 6 cm and 4 cm, with the same centre
- three straight lines drawn from the centre.

Here is a sketch of the logo.

Not drawn accurately

Complete this accurate drawing of the logo on the centimetre grid.

)

(2)
(Total 5 marks)

Q11. The diagram shows shape *ABCDE*.
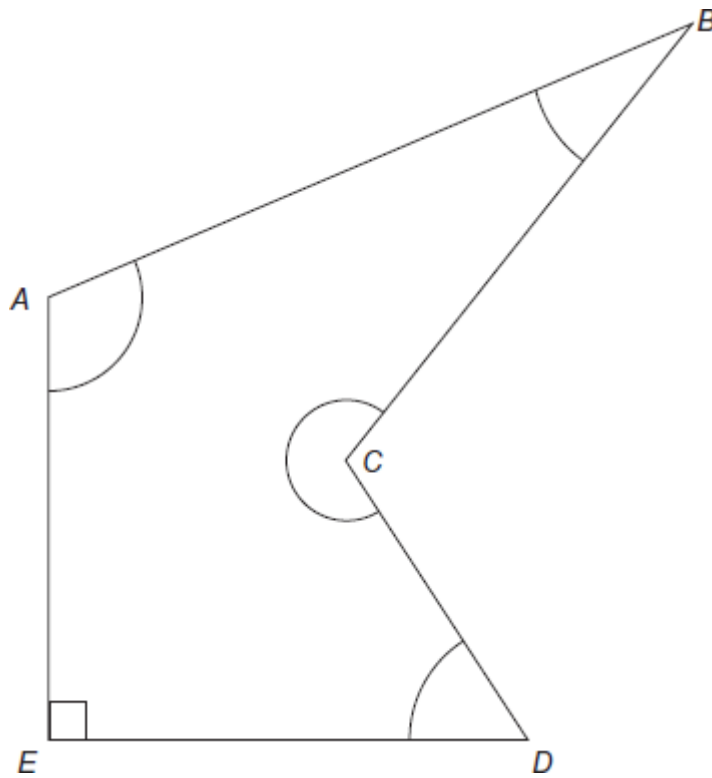
(a)   Complete each sentence using a letter.

Angle .... is a right angle.

Angle .... is an obtuse angle.

Angle .... is a reflex angle.

(3)

(b)   Circle the name of shape *ABCDE*.

Hexagon   Octagon   Pentagon   Kite

(1)
(Total 4 marks)

Q12.(a)   The diagram shows a rectangle on a centimetre grid.

The **perimeter** of this rectangle is 14 cm

Why is it **not** possible to draw a square of perimeter 14 cm using whole squares on a centimetre grid?
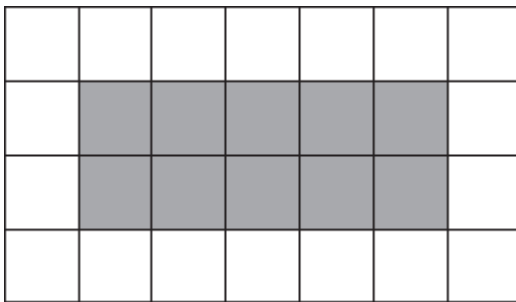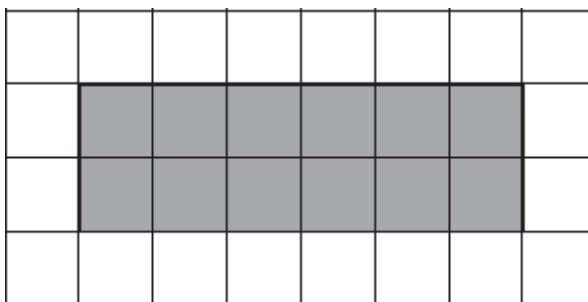
....

....

(1)

(b)   Here is another rectangle on a centimetre grid.

The **area** of this rectangle is 12 cm^2

Why is it **not** possible to draw a square of area 12 cm^2 using whole squares on a centimetre grid?

....

....

(1)

(c)   A Pentomino is a shape that has five squares joined to each other.
The squares cannot overlap or be joined corner to corner.

A, *B* and *C* are Pentominoes.
D is **NOT** a Pentomino.

A   B   C   D
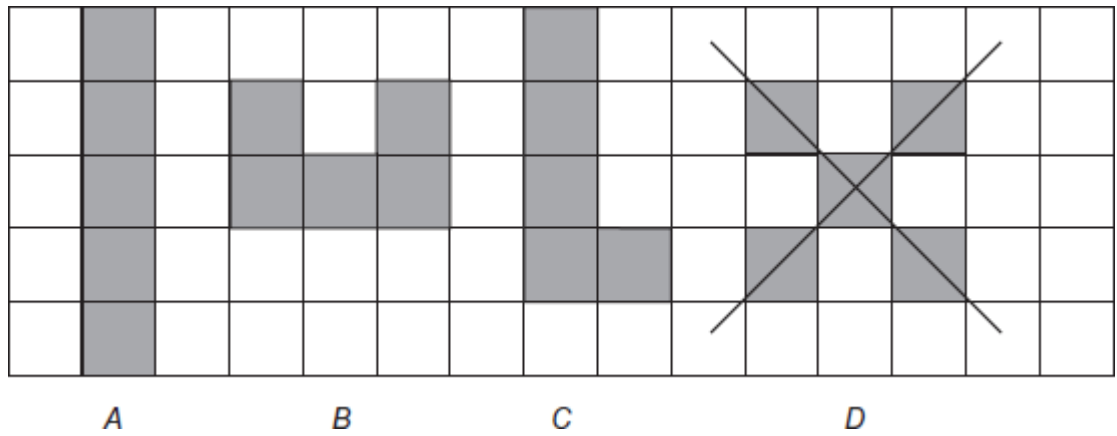
On this square grid, draw a different Pentomino that has

   no lines of symmetry

          and

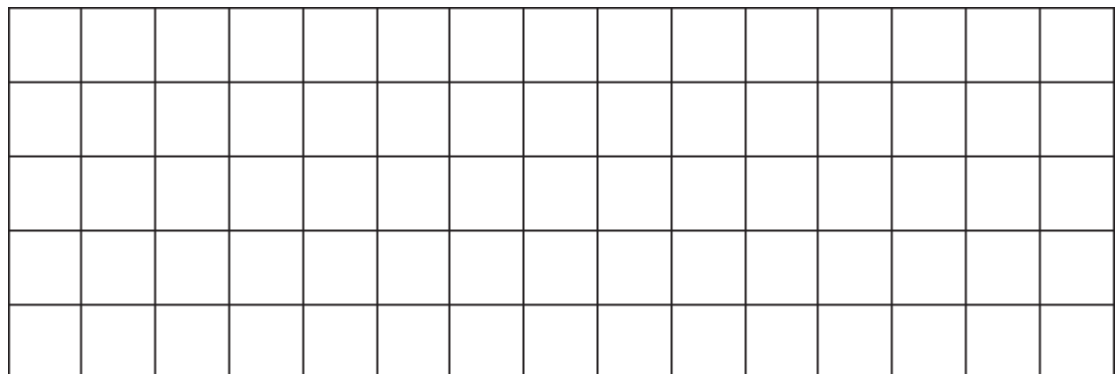   rotational symmetry of order 2

(2)
(Total 4 marks)

Q13. The clock shows the time that Helen finishes school.

(a)   Write down the time shown on the clock.

Answer ....

(1)

(b)   Circle the type of angle marked between the minute hand and the hour hand.

Acute   Right   Obtuse   Reflex

(1)

(c)   Helen has three lessons in the morning.

Lesson 1 starts at 0910.
Each lesson is 60 minutes long.
There is a 15-minute break between lessons 2 and 3.

At what time does lesson 3 end?

....

....

....

....

Answer ....

(3)
(Total 5 marks)

Q14.

(a)   For each letter tick [✔] if it has **line symmetry** and cross [✗] if it does not.

The first letter is done.

[✔]   [ ]   [ ]   [ ]   [ ]

M   A   T   H   S

(2)

(b)   For each letter tick ✔ if it has **rotational symmetry** and cross ✘ if it does not.

The first letter is done.

✘   ○   ○   ○   ○

E   X   A   M   S

(2)
(Total 4 marks)