

Exterior and Interior Angles

20 marks

1.

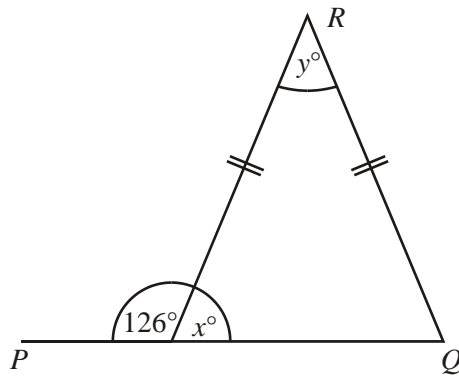


Diagram **NOT** accurately drawn

PQ is a straight line.

(a) Work out the size of the angle marked x° .

..... $^\circ$

(1)

(b) (i) Work out the size of the angle marked y° .

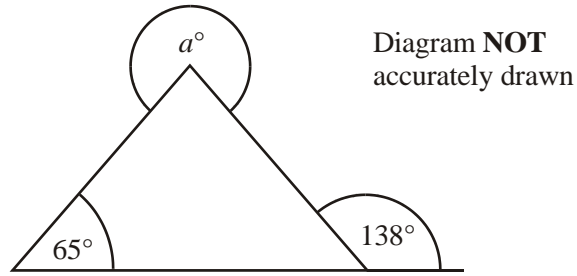
..... $^\circ$

(ii) Give reasons for your answer.

.....

(3)
 (Total 4 marks)

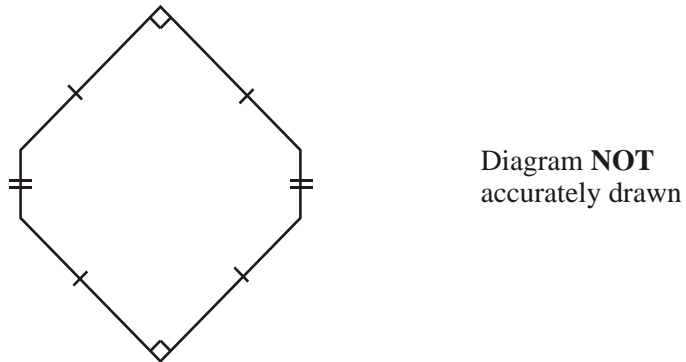
2.



Work out the value of a .

$a = \dots\dots\dots$
(Total 3 marks)

3.



The diagram shows a shape.

The shape is a 6-sided polygon.

(a) Write down the mathematical name for a 6-sided polygon.

$\dots\dots\dots$ (1)

The diagram below shows how the shape tessellates.

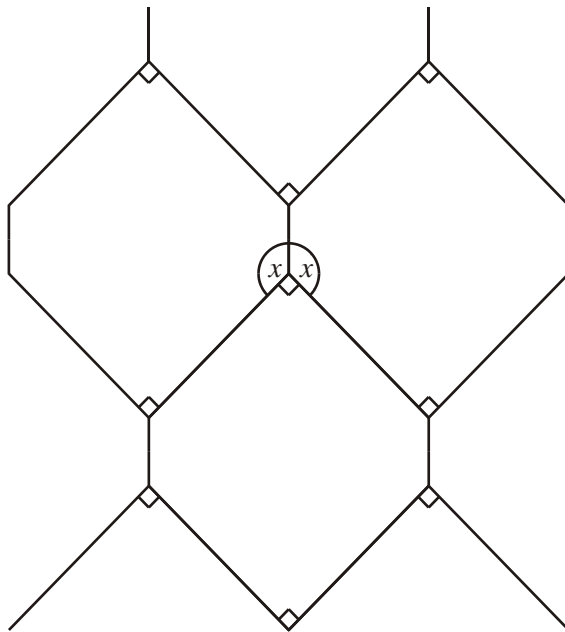


Diagram **NOT** accurately drawn

The size of each of the angles marked x is 135° .

(b) Give reasons why.

.....

.....

.....

(2)

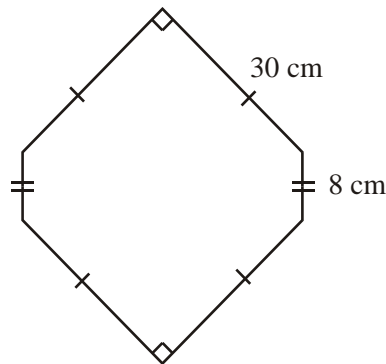


Diagram **NOT** accurately drawn

The diagram shows the lengths of two of the sides of the shape.

(c) Work out the perimeter of the shape.

.....cm

(2)

(Total 5 marks)

4. The diagram shows a 5-sided shape.
All the sides of the shape are equal in length.

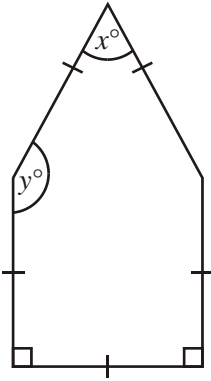


Diagram **NOT**
accurately drawn

- (a) (i) Find the value of x .

$$x = \dots\dots\dots$$

- (ii) Give a reason for your answer.

.....

(2)

- (b) Work out the value of y .

$$y = \dots\dots\dots$$

(2)

(Total 4 marks)

5.

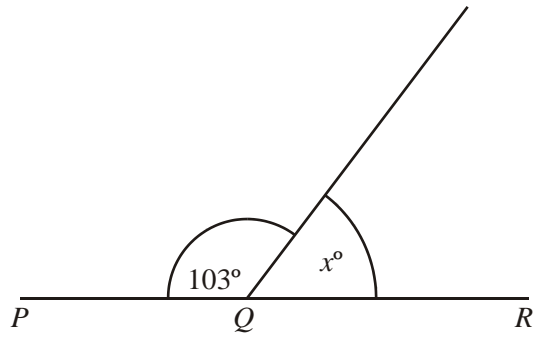


Diagram **NOT** accurately drawn

PQR is a straight line.

(i) Work out the value of x .

$x = \dots\dots\dots$

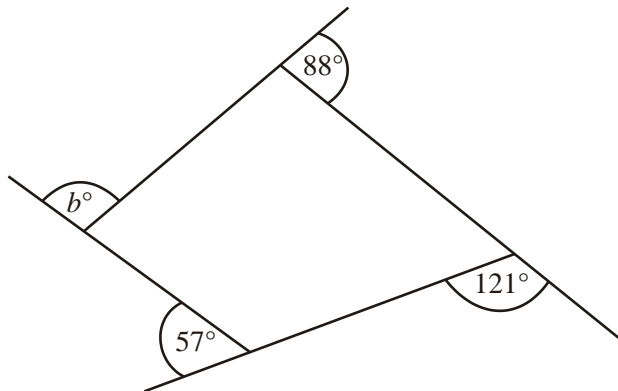
(ii) Give a reason for your answer.

.....

(Total 2 marks)

6. The diagram shows the exterior angles of a quadrilateral.

Diagram **NOT** accurately drawn.



Work out the value of b

$b = \dots\dots\dots$

(Total 2 marks)

Exterior and Interior Angles

Mark Scheme

1. (a) 54 1
B1 cao
- (b) (i) 72 3
 $180 - (54 + 54)$
M1 for $180 - (54 + 54)$
A1 ft from (a) if $x < 90$
- (ii) Reason [4]
B1 for mentioning isosceles and equal or base angles
or equal sides and equal or base angles
2. 287 3
 $138 - 65 = 73$
 $360 - 73$
M1 $180 - 138 = 42^\circ$, 107° seen
M1 $180 - (65 + "42") = 73^\circ$ seen
A1 for 287° cao [3]
3. (a) hexagon 1
B1 Condone spelling error
- (b) Sum of angles at a point is 360° 2
B1 for 360 seen
B1 for "point", "complete turn" or "a circle" or similar unless accompanied by an incorrect angle
SC If neither B1 scored, award B1 for a clear indication that the size of an angle, other than x , is 90° or a right angle (may be on diagram)
- (c) 136 2
 $30 \times 4 + 8 \times 2$
M1 $30 \times 4 + 8 \times 2$ or attempt to sum 5 or 6 lengths
A1 cao [5]

4. (a) (i) 60 2
Bl cao
- (ii) eg top triangle is equilateral
Bl for reason
- (b) 150 2
M1 for $\frac{180 - "60"}{2} + 90$
A1 ft from (a)(i) if $x < 90$
SC Bl for "60" + 90 if $x < 90$
- [4]**
5. (i) 77 2
Bl
- (ii) valid reason
Bl for angles on a straight line = 180°
- [2]**
6. $360 - (57 + 88 + 121)$
 94° 2
M1 for $360 - (57 + 88 + 121)$ or $57 + 88 + 121 + b = 360$
A1 cao
[SC: Bl for with or without working]
- [2]**