



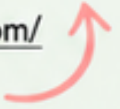
JP Maths

Revision



Attempt the paper
before watching the
solutions!

[https://www.youtube.com/
@JPMathsRevision](https://www.youtube.com/@JPMathsRevision)



FOUNDATION / HIGHER TIER

Angles in Polygons



INSTRUCTIONS

- Use **black ink** or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.



INFORMATION

- The marks for **each** question are shown in brackets– *use this as a guide as to how much time to spend on each question.*



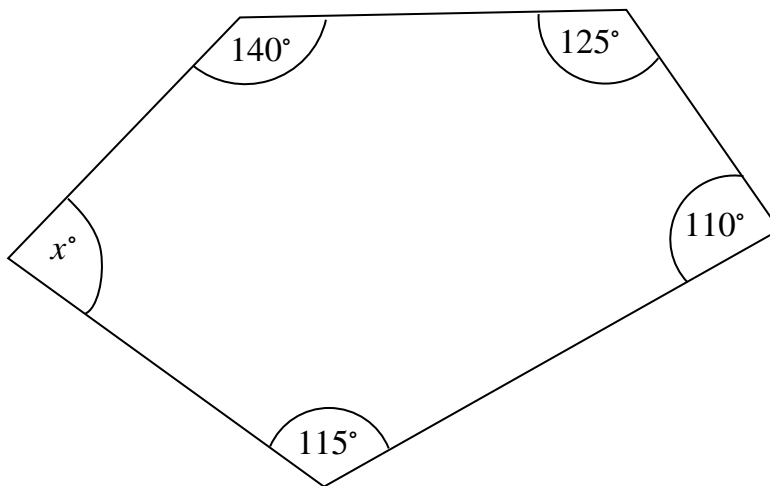
ADVICE

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.



You've got this!

1. Calculate the size of the angle marked x .



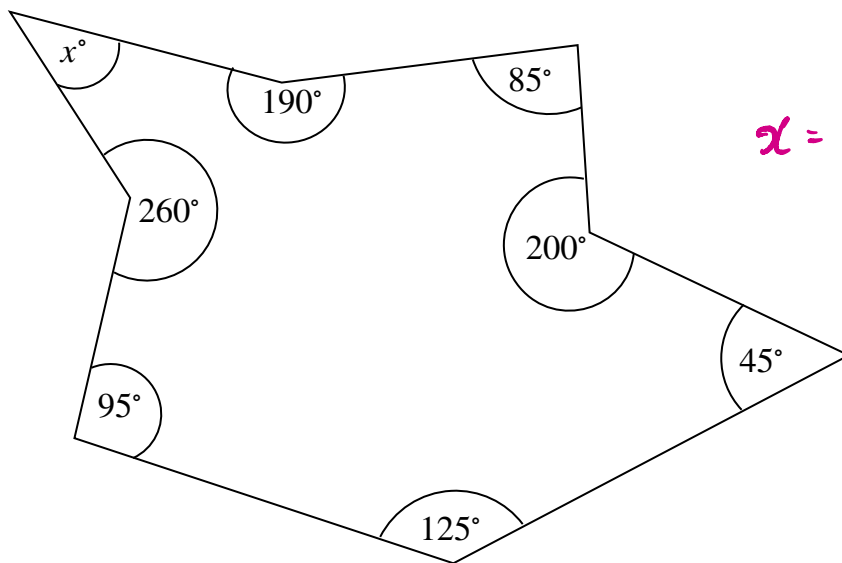
$$(5-2) \times 180 = 540$$

$$x = 540 - 140 - 125 - 110 - 115$$

50

(Total for Question 1 is 3 marks)

2. Calculate the size of the angle marked x .



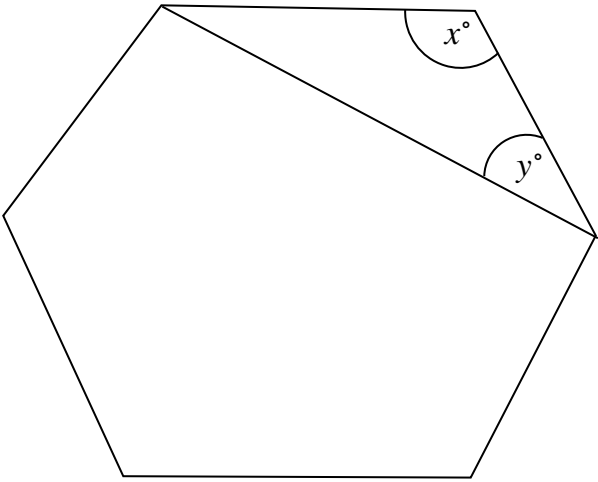
$$(7-2) \times 180 = 900$$

$$x = 900 - 190 - 85 - 200 - 45 - 125 - 95$$

80

(Total for Question 2 is 3 marks)

3. Below is a regular hexagon.



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

$$(6-2) \times 180 = 720$$
$$720 \div 6 = 120$$

$$\frac{120^\circ}{(2)}$$

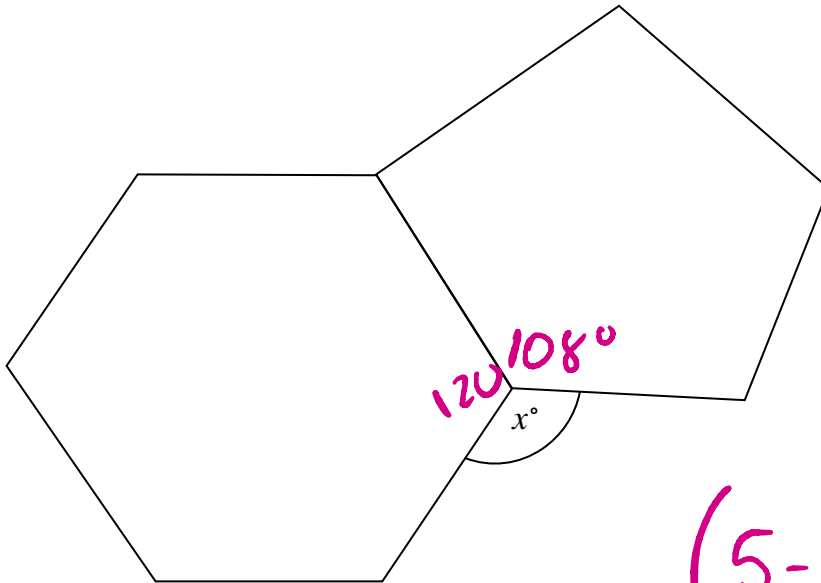
(b) Work out the size of the angle marked y°

$$\frac{180-120}{2} = 30$$

$$\frac{30^\circ}{(2)}$$

(Total for Question 3 is 4 marks)

4. Below is a regular hexagon and a regular pentagon.



Work out the size of the angle marked x°

$$x = 360 - 120 - 108 \\ = 132$$

$$\frac{(5-2) \times 180}{5} =$$
$$\frac{(6-2) \times 180}{6} = 120$$

132

(Total for Question 4 is 4 marks)

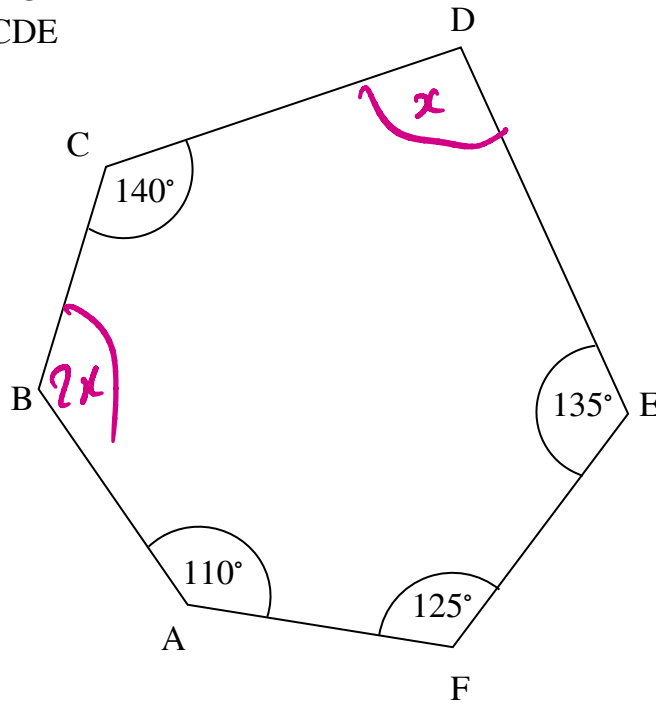
5. A regular polygon has 15 sides.
Work out the size of each interior angle.

$$\frac{(15-2) \times 180}{15}$$

156

(Total for Question 5 is 3 marks)

6. Here is a hexagon ABCDEF.
Angle ABC = 2 x angle CDE.
Find the size of angle CDE



$$(6-2) \times 180 = 720$$

$$720 - 140 - 135 - 110 - 125$$

$$= 210 = 3x$$

$$x = 70$$

70°

(Total for Question 6 is 4 marks)

7. Below is a pentagon ABCDE with a line of symmetry through C.

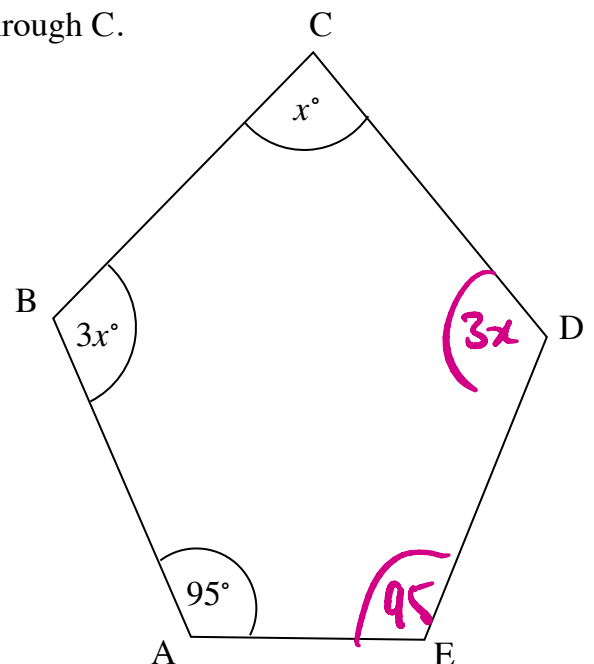
Find the size of angle BCD.

$$(5-2) \times 180 = 540$$

$$7x + 140 = 540$$

$$7x = 350$$

$$x = 50$$



50°

(Total for Question 7 is 4 marks)

8. Each exterior angle of a regular polygon is 24° .
Work out how many sides the polygon has.

$$360 \div 24$$

15

(Total for Question 8 is 2 marks)

9. Each interior angle of a regular polygon is 150° .
Work out how many sides the polygon has.

$$180 - 150 = 30$$

$$360 \div 30$$

12

(Total for Question 9 is 2 marks)

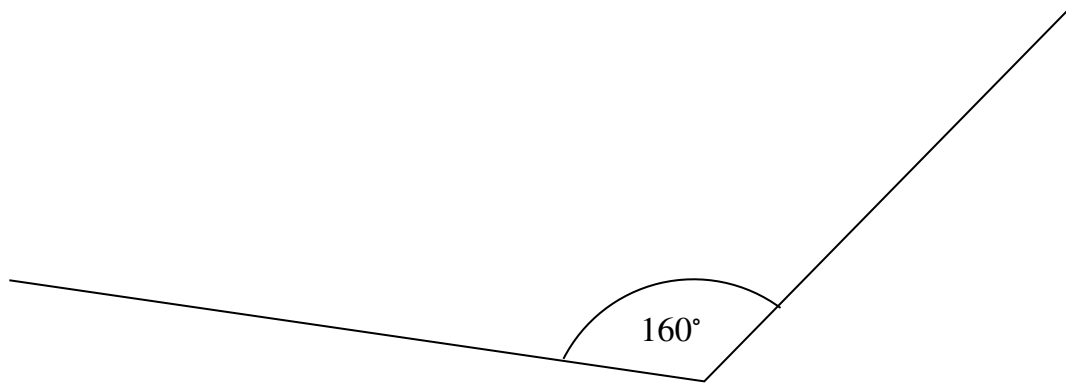
10. A regular polygon has 18 sides.
Work out the size of each exterior angle.

$$360 \div 18 =$$

20

(Total for Question 10 is 2 marks)

11. Shown is an interior angle from a regular polygon.



Calculate the number of sides the polygon has.

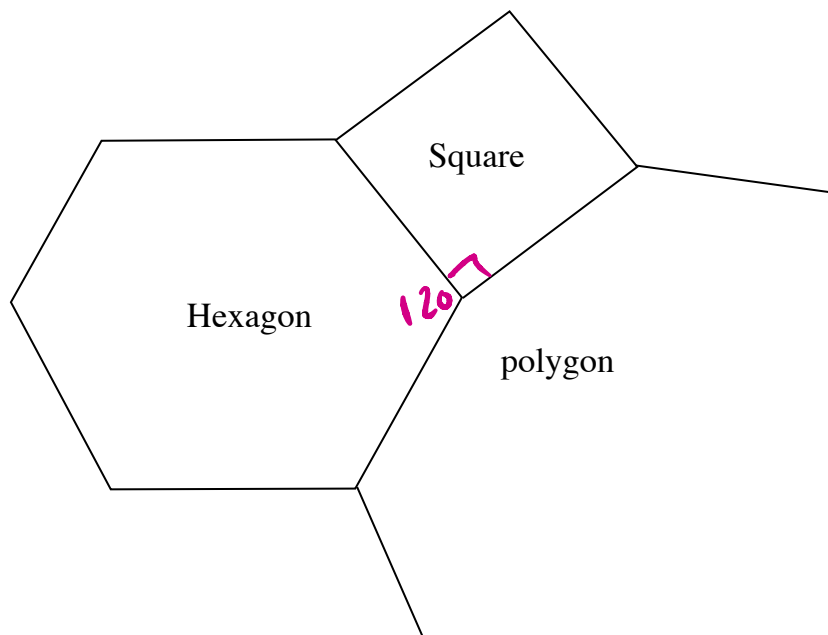
$$180 - 160 = 20$$

$$360 \div 20 =$$

18

(Total for Question 11 is 2 marks)

12. Shown below is part of a regular polygon, a regular hexagon and a square meeting at a point.



Work out how many sides the regular polygon has.

$$\frac{(6-2) \times 180}{6} = 120$$

$$360 - 120 - 90 = 150$$

$$180 - 150 = 30$$

$$360 \div 30 = 12$$

12

(Total for Question 12 is 4 marks)

13. The exterior angle of a regular polygon is three times smaller than the exterior angle of a regular hexagon. Work out how many sides the polygon has.

$$\frac{360}{6} = 60$$

$$60 \div 3 = 20$$

$$360 \div 20 = 18$$

18

(Total for Question 13 is 4 marks)

14. The interior angle of a regular polygon is 5 times its exterior angle.

Work out how many sides the polygon has.

$$5x + x = 180$$

$$6x = 180$$

$$x = 30$$

$$360 \div 30 = 12$$

12

.....
(Total for Question 14 is 4 marks)
