



# MATHS

## BOOKS - RS AGGARWAL MATHS (HINGLISH)

### POLYGONS

#### Solved Examples

1. Find the measure of each exterior angle of a regular polygon of :

(i) 8 sides , (ii) 9 sides , (iii) 12 sides



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2. Is it possible to have a regular polygon each of whose exterior angles is  $25^\circ$  ?



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3. Is it possible to have a regular polygon each of whose interior angles is  $45^\circ$  ?



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4. Find the measure of each interior angle of a regular

(i) pentagon (ii) hexagon (iii) octagon (iv) polygon of 12 sides



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5. What is the minimum interior angle possible for a regular polygon ?

A. 50

B. 40

C. 30

D. 60

**Answer: D**



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**6.** What is the maximum exterior angle possible for a regular polygon ?

A. 150

B. 100

C. 120

D. 180

**Answer: C**



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7. What is the sum of all interior angles of a polygon of

(i)  $n$  sides (ii) 7 sides (iii) 8 sides (iv) 10 sides ?



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8. What is the number of diagonals in a

(i) quadrilateral (ii) pentagon (iii) hexagon (iv)

polygon of 10 sides ?



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9. Find the number of sides of a regular polygon whose each exterior angle measures

$45^\circ$  .



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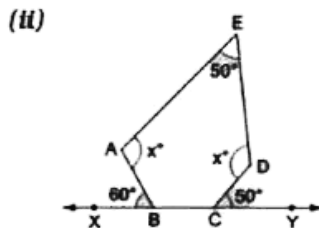
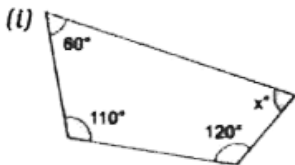
10. What is the measure of

(i) each exterior angle of a regular hexagon ?

(ii) each interior angle of a regular hexagon ?

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11. Find the angle measure  $x$  in each of the following:

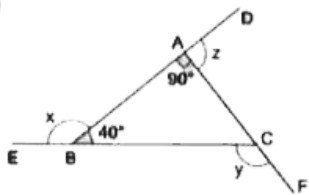




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12. Look at the figures given below :

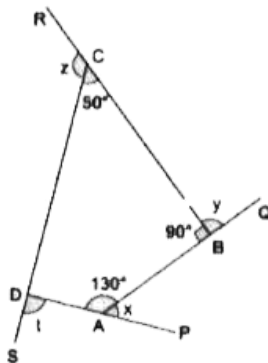
(i)



In figure (i), find  $x + y + z$ .

In figure (ii), find  $x + y + z + t$ .

(ii)



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Exercise 14 A



1. Find the measure of each exterior angle of a regular

(i) pentagon (ii) hexagon (iii) heptagon (iv) decagon (v) polygon of 15 sides.



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2. Is it possible to have a regular polygon each of whose exterior angles is  $50^\circ$  ?



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3. Find the measure of each interior angle of a regular polygon having

(i) 10 sides (ii) 15 sides .



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4. Is it possible to have a regular polygon each of whose interior angles is  $100^\circ$  ?

A. No

B. Yes

C. Can not determine

D. None of these

**Answer: A**



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5. What is the sum of all interior angles of a regular

(i) pentagon (ii) hexagon (iii) nonagon (iv) polygon of 12 sides ?



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6. What is the number of diagonals in a

(i) heptagon (ii) octagon (iii) polygon of 12 sides ?



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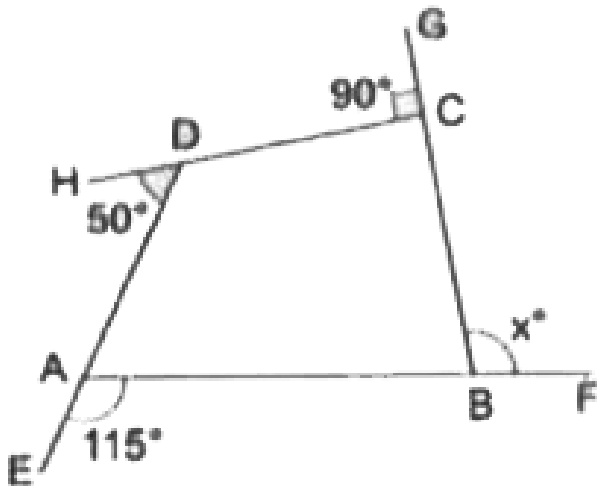
7. Find the number of sides of a regular polygon whose each exterior angle measures :

(i)  $40^\circ$ , (ii)  $36^\circ$ , (iii)  $72^\circ$ , (iv)  $30^\circ$



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8. In the given figure, find the angle measure  $x$ .



A.  $x = 115$

B.  $x = 150$

C.  $x = 105$

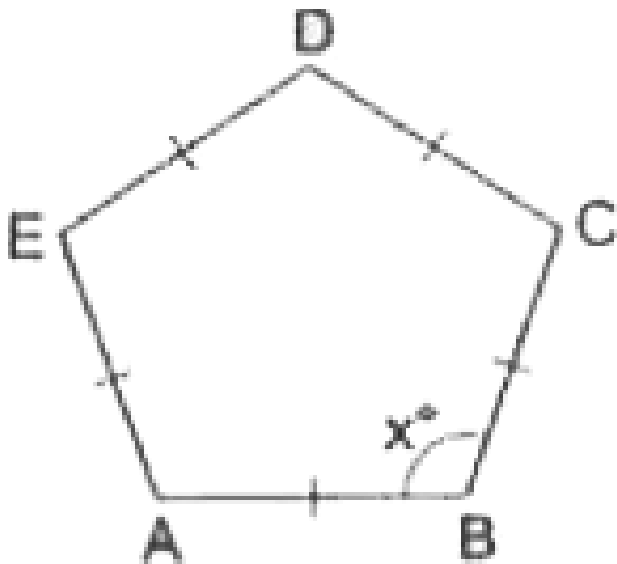
D.  $x = 151$

**Answer: C**



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9. Find the angle measure  $x$  in the given figure.



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1. How many diagonals are there in a pentagon ?

A. 5

B. 7

C. 6

D. 10

**Answer: A**



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2. How many diagonals are there in a hexagon ?

A. 6

B. 8

C. 9

D. 10

**Answer: c**



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3. How many diagonals are there in a octagon ?

A. 8

B. 16

C. 18

D. 20

**Answer: D**



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4. How many diagonals are there in a polygon having 12 sides ?

A. 12

B. 24

C. 36

D. 54

**Answer: D**



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5. A polygon has 27 diagonals . How many sides it have ?

A. 7

B. 8

C. 9

D. 12

**Answer: C**



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6. The angles of a pentagon are  $x^\circ$ ,  $(x + 20)^\circ$ ,  $(x + 40)^\circ$ ,  $(x + 60)^\circ$  and  $(x + 80)^\circ$ . The smallest angle of the pentagon is

A.  $75^\circ$

B.  $68^\circ$

C.  $78^\circ$

D.  $85^\circ$

**Answer: B**



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7. The measure of each exterior angle of a regular polygon is  $40^\circ$ . How many sides does it have ?

A. 8

B. 9

C. 6

D. 10

**Answer: B**





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8. Each interior angle of a polygon is  $108^\circ$ ,

How many sides does it have ?

A. 8

B. 6

C. 5

D. 7

**Answer: C**



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9. Each interior angle of a polygon is  $135^\circ$ .

How many sides does it have ?

A. 8

B. 7

C. 6

D. 10

**Answer: A**



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10. In a regular polygon, each interior angle is thrice the exterior angle. The number of sides of the polygon is

A. 6

B. 8

C. 10

D. 12

**Answer: B**



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11. Each interior angle of a regular decagon is

A.  $60^\circ$

B.  $120^\circ$

C.  $144^\circ$

D.  $180^\circ$

**Answer: C**



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12. The sum of all interior angles of a hexagon is

A. 6 right  $\angle$ s

B. 8 right  $\angle$ s

C. 9 right  $\angle$ s

D. 12 right  $\angle$ s

**Answer: B**



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**13.** The sum of all interior angles of a regular polygon is  $1080^\circ$ . What is the measure of each of its interior angles ?

A.  $135^\circ$

B.  $120^\circ$

C.  $156^\circ$

D.  $144^\circ$

**Answer: A**



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14. The interior angle of a regular polygon exceeds its exterior angle by  $108^\circ$ . How many sides does the polygon have ?

A. 16

B. 14

C. 12

D. 10

**Answer: D**



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