Bahubhujanga





A regular pentagon, regular heptagon and equilateral triangle are placed as in the figure[Marks :(5)]

i) Find $\angle APB$, $\angle BPQ$, and $\angle APR$

ii) Find ∠QPR

Ans. regular pentagon =108

regular heptagon = 120

equilateral triangle = 60

total angle around a point =360

ii) ∠PQR = 360 - 288 = 72°

Question.2. i) Find the sum of the angles of a 24 sided polygon[Marks :(3)]

ii) If the polygon is regular, find the measure of one interior angle.

Ans. i) (n – 2) x 180

22 x 180 = 3960

one angle = 3960/24

= 165

Question.3. The interior angle of a regular polygon is 20 more than thrice of its exterior angle[Marks :(5)]

i) If the exterior angle is x, what will be the interior angle?

ii) What is the sum of interior and exterior angles of a vertex?

iii) Form an equation with this idea

iv) Find the exterior angle

Ans. i) interior angle 3x + 20

ii) sum = 180

iii) x + (3x + 20) = 180

4x + 20 = 180, x = 40

interior angle = 140

Question.4. How much more is the sum of the angles of a 20 sided polygon than a 12 sided polygon?[Marks :(2)]

Ans. 8 x 180 = 1440°

Question.5. The measurement of the interior and exterior angles of a regular polygon are equal. Find the number of sides of that polygon?[Marks :(2)]

Ans. interior angle +exterior angle =180

each = 90

number of exterior angle =360/90 = 4

sides = 4

Question.6. In the figure the vertices of the polygon ABCDEFGH are points on a circle with centre O. [Marks :(4)]

a) What is ∠AOB ?

b) Construct a 8 sided regular polygon with vertices on a circle of radius 3 centimetre.





b) draw 45° at the centre of the circle

c)dived the circle in to 8 equal parts and draw 8 sided polygon

Question.7. All triangles in the figure are equilateral triangles. Find ∠ACF [Marks :(3)]



Ans. sum of angles around C in the 4 triangles = 4*60 = 240

total sum of angles around C = 360

 $\angle ACF = 360 - 240 = 120$

Question.8. If one interior angle of a regular polygon is 179°[Marks :(3)]

- a) Write the measure of one exterior angle
- b) Find the number of sides of the polygon

Ans. interior angle at one vertex + exterior angle = 180

exterior angle $= 1^{\circ}$

sum of exterior angle = 360

number of sides = 360/1 = 360

Question.9. Sum of the angles of a polygon having n sides is x° what will be the sum of the angles of a polygon having n+2 sides?[Marks :(2)]

Ans. X + 2 x 180 (2)

= x + 360

Question.10. a) What is the sum of the measures of the exterior angle of a polygon?[Marks :(2)]

b) Find the number of sides of that polygon?

Ans. sum of exterior angle = 360

one exterior angle 30 then sides = 360/30 = 12

Question.11. In the figure what is the sum of the angles of triangle ABC ?[Marks :(2)]

find the sum of the angles of the polygon in the figure.



Ans. a) 180

b) 180 x 6 = 1080