

1 Hallar el número de diagonales de un pentadecágono.

$$n = 15 \quad D = \frac{n(n-3)}{2}$$

$$D = \frac{15(15-3)}{2} = \frac{15(12)}{2} = 15(6) = 90$$

90 Diagonales

2 ¿Cómo se llama el polígono regular cuyo ángulo exterior mide 40°?

$$e = \frac{360}{n} \quad e = 40$$

$n = \text{número de lados del polígono}$

$$40 = \frac{360}{n}$$

$$40n = 360$$

$$n = \frac{360}{40}$$

$$n = 9$$

el polígono tiene 9 lados
Nonágono

3 En qué polígono el número de diagonales es igual al número de lados?

$$D = n$$

$$\frac{n(n-3)}{2} = n$$

$$n(n-3) = 2n$$

$$n-3 = 2$$

$$n = 2+3$$

$$n = 5 \quad \text{Pentágono}$$

4 Calcular el número de vértices de un polígono cuyo número de diagonales es igual al triple del número de lados.

Número de Vértices es igual al número de lados

$$D = 3n$$

$$\frac{n(n-3)}{2} = 3n$$

$$n(n-3) = 6n$$

$$n-3 = 6$$

$$n = 6+3$$

$$n = 9$$

Tiene 9 Vértices

5 Si el ángulo central de un polígono regular mide 30°. ¿Cuántas diagonales tiene el polígono?

$$c = 30$$

$$c = \frac{360}{n}$$

$$30 = \frac{360}{n}$$

$$30n = 360$$

$$n = \frac{360}{30}$$

$$n = 12$$

$$D = \frac{n(n-3)}{2}$$

$$D = \frac{12(12-3)}{2}$$

$$D = \frac{12(9)}{2}$$

$$D = 6(9) = 54$$

54 diagonales

6 Del gráfico ABCDEF es un hexágono regular; calcular "x"

$$i = \frac{180(n-2)}{n}$$

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

$$i = \frac{180(4)}{6}$$

$$i = 120^\circ$$

$$x + i + x = 180$$

$$2x + 120 = 180$$

$$2x = 180 - 120$$

$$2x = 60$$

$$x = \frac{60}{2} = 30^\circ$$

7 Calcular "OP", si AB = 8 y r = 5

CD : Diametro
AB : Cuerda

$$OP^2 + AP^2 = OA^2$$

$$OP^2 + 4^2 = 5^2$$

$$OP^2 + 16 = 25$$

$$OP^2 = 25 - 16$$

$$OP^2 = 9$$

$$OP = 3$$

TRIGONOMETRIA SISTEMA DE MEDIDAS ANGULARES

$$\frac{S}{360} = \frac{C}{400} = \frac{R}{2\pi}$$

$$\frac{S}{180} = \frac{C}{200} = \frac{R}{\pi}$$

$$\frac{S}{180} = \frac{C}{200}$$

$$\frac{S}{9} = \frac{C}{10}$$

$$S = 9K$$

$$C = 10K$$

$$\frac{S}{180} = \frac{R}{\pi}$$

$$\frac{9K}{180} = \frac{R}{\pi}$$

$$\frac{K}{20} = \frac{R}{\pi}$$

$$K = \frac{20R}{\pi}$$

$$\frac{C}{200} = \frac{R}{\pi}$$

$$\frac{10K}{200} = \frac{R}{\pi}$$

$$\frac{K}{20} = \frac{R}{\pi}$$

$$K = \frac{20R}{\pi}$$

$$10K = \frac{20R}{\pi}$$

$$K = \frac{2R}{\pi}$$

8 Reducir :

$$E = \frac{2S - C}{C - S}$$

$$E = \frac{2(9K) - 10K}{10K - 9K}$$

$$E = \frac{18K - 10K}{K}$$

$$E = \frac{8K}{K} = 8$$

9 Expresar en Radianes : $3\pi S - 2\pi C = 7$

$$3\pi(9K) - 2\pi(10K) = 7$$

$$27\pi K - 20\pi K = 7$$

$$7\pi K = 7$$

$$\pi K = 1$$

$$K = \frac{1}{\pi}$$

$$K = \frac{20R}{\pi}$$

$$\frac{20R}{\pi} = \frac{1}{\pi}$$

$$20R = 1$$

$$R = \frac{1}{20} \text{ rad}$$

10 Expresar en radianes si se cumple :

$$C - S = 4$$

$$10K - 9K = 4$$

$$K = 4$$

$$20R = 4$$

$$\frac{\pi}{20R} = 4\pi$$

$$R = \frac{4\pi}{20}$$

$$R = \frac{\pi}{5} \text{ rad}$$

$$K = \frac{20R}{\pi}$$

11 Determine un ángulo en radianes si se cumple :

$$\begin{pmatrix} S & -1 & C \\ 9 & -1 & 10 \end{pmatrix} \begin{pmatrix} +1 \\ +1 \end{pmatrix} = 15$$

$$\begin{pmatrix} 9K & -1 & 10K \\ 9 & -1 & 10 \end{pmatrix} \begin{pmatrix} +1 \\ +1 \end{pmatrix} = 15$$

$$\begin{pmatrix} 9(K-1) & (K+1) \\ K_2 - 1_2 \end{pmatrix} = 15$$

$$K_2 - 1_2 = 15$$

$$K_2 = 15 + 1$$

$$K_2 = 16$$

$$K = 4$$

$$20R = 4$$

$$\frac{\pi}{20R} = 4\pi$$

$$R = \frac{4\pi}{20}$$

$$R = \frac{\pi}{5} \text{ rad}$$

$$K = \frac{20R}{\pi}$$