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¡23 Años Educando para toda la Vida!

"Año del Diálogo y la Reconciliación Nacional"

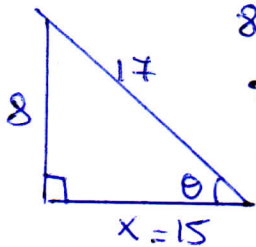
RESOLUCION BALOTARIO DEL CURSO DE TRIGONOMETRÍA – PRE° SECUNDARIA

1

Si $\sin \theta = \frac{8}{17}$, θ agudo, calcule:

$$K = \frac{1}{2} \sin \theta + 2 \cos \theta$$

- A) 5 B) 4 C) 3 **D) 2** E) 1



$$\begin{aligned} 8^2 + x^2 &= 17^2 \\ x^2 &= 289 - 64 \\ x^2 &= 225 \\ x &= 15 \end{aligned}$$

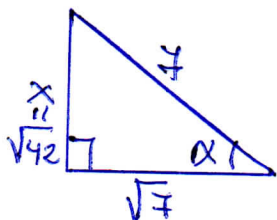
$$\Rightarrow K = \frac{1}{2} \left(\frac{8}{17} \right) + 2 \left(\frac{15}{17} \right) = \frac{8 + 60}{34} = \frac{68}{34}$$

$$K = 2$$

2

Si $\cos \alpha = \frac{\sqrt{7}}{7}$, calcule $M = \sec^2 \alpha + \sqrt{42} \sin \alpha$.

- A) 21 B) 19 **C) 13** D) 11 E) 12



$$\begin{aligned} x^2 + (\sqrt{7})^2 &= 7^2 \\ x^2 + 7 &= 49 \\ x &= \sqrt{42} \end{aligned}$$

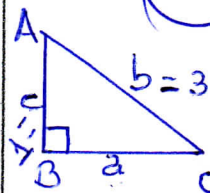
$$M = \left(\frac{7}{\sqrt{7}} \right)^2 + \sqrt{42} \left(\frac{\sqrt{42}}{7} \right)$$

$$M = \frac{49}{7} + \frac{42}{7} = 7 + 6 = 13$$

3

En un $\triangle ABC$ ($B=90^\circ$) se cumple que $3 \cos C = \tan A$. Calcule $Q = 3 \cos^2 A$.

- A) 3 **B) $\frac{1}{3}$** C) 9 D) $\frac{1}{9}$ E) 1



$$3 \left(\frac{a}{b} \right) = \frac{a}{c}$$

$$\frac{3}{1} = \frac{b}{c}$$

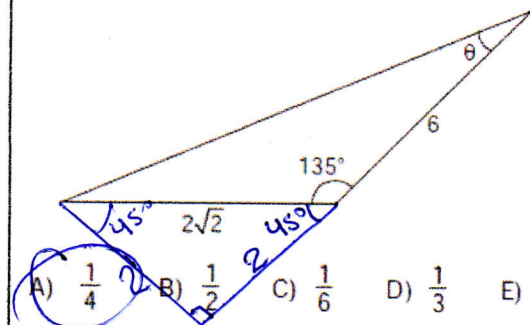
$$\begin{aligned} c^2 + a^2 &= b^2 \\ 1^2 + a^2 &= 3^2 \\ a^2 &= 8 \\ a &= \sqrt{8} \end{aligned}$$

$$\begin{aligned} Q &= 3 \left(\frac{c}{b} \right)^2 \\ Q &= 3 \left(\frac{1}{3} \right)^2 \end{aligned}$$

$$Q = \frac{3 \times 1}{9} = \frac{1}{3}$$

4

Del grafico, calcule $\tan \theta$.



- A) $\frac{1}{4}$** B) $\frac{1}{2}$ C) $\frac{1}{6}$ D) $\frac{1}{3}$ E) $\frac{1}{5}$

$$\tan \theta = \frac{2}{8} = \frac{1}{4}$$

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"Voluntad, Disciplina y Acción"