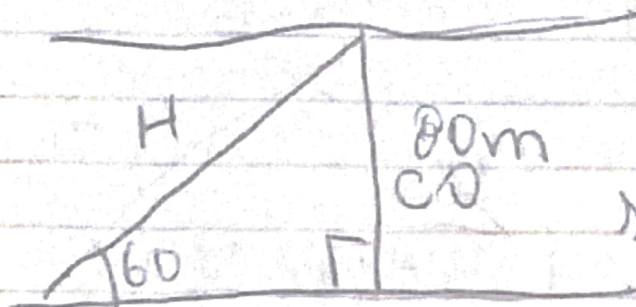


Nome: Marcos Vinicius Fagundes
RA: 0731921041

Exerc P1

3.



$$\sin 60 = \frac{CO}{H}$$

$$\sin 60 = \frac{80}{H}$$

$$\frac{\sqrt{3}}{2} = \frac{80}{H}$$

$$\sqrt{3}H = 2 \cdot 80$$

$$H = \frac{160 \cdot \sqrt{3}}{\sqrt{3} \sqrt{3}} =$$

$$\frac{160 \cdot \sqrt{3}}{3}$$

$$53.33\sqrt{3}$$

$$\approx 92.37m$$

$$4) \frac{4 \cos\left(\frac{11\pi}{6}\right) \times \sin\left(\frac{3\pi}{4}\right) + 6 \operatorname{Tg}\left(\frac{7\pi}{4}\right)}{2 \cos\left(\frac{7\pi}{6}\right) + 3 \operatorname{Tg}\left(\frac{\pi}{6}\right) - 2 \sin\left(\frac{7\pi}{4}\right)}$$

$$4 \cdot \cos 330 \cdot \sin 45 + 6 \operatorname{tg} 315$$

$$2 \cos 210 + 3 \operatorname{tg} 30 - 2 \sin 315$$

$$4 \cdot \frac{\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} + 6 \cdot (-1)$$

$$2\left(-\frac{\sqrt{3}}{2}\right) + 3 \cdot \frac{\sqrt{3}}{3} - 2\left(-\frac{\sqrt{2}}{2}\right)$$

$$\frac{4\sqrt{3}}{2} \cdot \frac{\sqrt{2}}{2} - 6$$

$$-2\frac{\sqrt{3}}{2} + 3\frac{\sqrt{3}}{3} + 2\frac{\sqrt{2}}{2}$$

$$\frac{2\sqrt{6}}{2} - 6 = \frac{\sqrt{6} - 6}{-\sqrt{3} + \sqrt{3} + \sqrt{2}}$$

$$\frac{\sqrt{6} - 6}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{12} - 6 \cdot 2}{2 \cdot 2}$$

$$= \boxed{\sqrt{12} - 3}$$

$$5) \frac{\sin x}{\cos \sec x} + \frac{\cos x}{\sec x}$$

$$\boxed{\tan x \cdot \sec x + \tan x}$$

$$6) \sin(x+y) - \sin(x-y) = 2 \sin x \cos y$$

$$\cancel{\sin a \cos b} + \cancel{\sin b \cos a} - \cancel{\sin a \cos b} - \cancel{\sin b \cos a}$$

$$= 0$$

R: Falso

$$7) \cos x = \frac{7}{5} \text{ e que } 0 < x < 90^\circ, \text{ deter-} \\ \text{mine } \tan(x)$$

$$\cos x = \frac{1}{\sec x}$$

$$\cos^2 x = 1 - \sin^2 x$$

$$\cos^2 = 1 - \frac{5}{7}$$

$$\frac{7}{5} \neq \frac{1}{\sec x}$$

$$\cos^2 = \frac{7-5}{7}$$

$$7 \sin x = 5$$

$$\sin x = \frac{5}{7}$$

$$\cos = \frac{\sqrt{2}}{7}$$

$$\tan = \frac{5}{7} = \frac{5 \cdot 7 \cdot \sqrt{2}}{7 \cdot \sqrt{2} \cdot \sqrt{2}} = \frac{5 \cdot 7 \sqrt{2}}{7 \cdot 2} = \frac{35 \sqrt{2}}{14}$$

$$\frac{\sqrt{2}}{2}$$

$$\boxed{\tan x = \frac{5\sqrt{2}}{2}}$$

$$8) \lim_{x \rightarrow 4} \left(\frac{x^2 - 4x}{x^2 - 16} \right) = \frac{4^2 - 4 \cdot 4}{4^2 - 16} = \frac{16 - 16}{16 - 16} = \frac{0}{0} \text{ und}$$

$$\cancel{x} \frac{(x-4)}{(x-16)}$$

$$\boxed{\lim_{x \rightarrow 4} \left(\frac{x^2 - 4x}{x^2 - 16} \right) = 0}$$

$$\frac{4-4}{-16} = \frac{0}{-16} = 0$$

$$9) \lim_{x \rightarrow 2} \left(\frac{x^2 - 4x + 4}{x^2 - x - 6} \right) = \boxed{0}$$

$$\frac{2^2 - 4 \cdot 2 + 4}{2^2 - 2 - 6} = \frac{4 - 8 + 4}{4 - 2 - 6} = \frac{0}{-4} = 0$$

$$10) \lim_{x \rightarrow 2^+} \left(\frac{x^2}{2 \cdot x} \right) = +\infty$$

$$\frac{2,01^2}{2 \cdot 2,01} = \frac{4,0401}{4,02} = 1,005$$

$$11) \lim_{x \rightarrow -\infty} \left(\frac{3x^3 + x}{3x^2 - 5x^6} \right) = \boxed{-\infty}$$

$$\frac{3x^3}{3x^2} = 3x$$

$$3 \cdot -\infty = -\infty$$