

Nombre: Cutlleyn Guevara
Curso: Segundo "A"
Fecha: 20/11/2024

Nº
12

• Ape # 6

$$31) \lim_{x \rightarrow 7} \frac{x^2 - 49}{x - 7}$$

$$\lim_{x \rightarrow 7} \frac{(7)^2 - 49}{(7) - 7}$$

$$\lim_{x \rightarrow 7} \frac{49 - 49}{7 - 7}$$

$$\lim_{x \rightarrow 7} \frac{0}{0} \text{ Indeterminado}$$

$$\lim_{x \rightarrow 7} \frac{x^2 - 49}{x - 7}$$

$$\lim_{x \rightarrow 7} \frac{(x+7)(\cancel{x-7})}{(\cancel{x-7})}$$

$$\lim_{x \rightarrow 7} (x+7)$$

$$\lim_{x \rightarrow 7} (7+7)$$

$$\lim_{x \rightarrow 7} 14$$

$$36) \lim_{x \rightarrow 4} \frac{3x^2 - 17x + 20}{4x^2 - 25x + 36}$$

$$\lim_{x \rightarrow 4} \frac{3(4)^2 - 17(4) + 20}{4(4)^2 - 25(4) + 36}$$

$$\lim_{x \rightarrow 4} \frac{3(16) - 68 + 20}{4(16) - 25(4) + 36}$$

$$\lim_{x \rightarrow 4} \frac{48 - 68 + 20}{64 - 100 + 36}$$

Time to
make
the
mag
happy

$$\lim_{x \rightarrow 4} \frac{48 - 68 + 20}{64 - 100 + 36}$$

$$\lim_{x \rightarrow 4} \frac{0}{0} \text{ Indeterminación}$$

$$\lim_{x \rightarrow 4} \frac{3x^2 - 17x + 20}{4x^2 - 25x + 36}$$

$$\lim_{x \rightarrow 4} \frac{3x^2 - 5x - 12x + 20}{4x^2 - 9x - 16x + 36}$$

$$\lim_{x \rightarrow 4} \frac{x(3x - 5) - 4(3x - 5)}{x(4x - 9) - 4(4x - 9)}$$

$$\lim_{x \rightarrow 4} \frac{(3x - 5) \times (x - 4)}{x(4x - 9) - 4(4x - 9)}$$

$$\lim_{x \rightarrow 4} \frac{(3x - 5)(x - 4)}{(4x - 9)(x - 4)}$$

$$\lim_{x \rightarrow 4} \frac{3x - 5}{4x - 9}$$

$$\lim_{x \rightarrow 4} \frac{3(4) - 5}{4(4) - 9}$$

$$\lim_{x \rightarrow 4} \frac{12 - 5}{16 - 9}$$

$$\lim_{x \rightarrow 4} \frac{7}{7}$$

$$\lim_{x \rightarrow 4} 1$$

39) $\lim_{y \rightarrow -3} \sqrt{\frac{y^2 - 9}{2y^2 + 7y + 3}}$

$$\lim_{y \rightarrow -3} \sqrt{\frac{(-3)^2 - 9}{2(-3)^2 + 7(-3) + 3}}$$

Time to make the major happen

$$\lim_{y \rightarrow -3} \frac{9 - 9}{2(9) - 21 + 3}$$

$$\lim_{y \rightarrow -3} \frac{0}{18 - 21 + 3} = \frac{0}{0} \text{ Indeterminado}$$

$$\lim_{y \rightarrow -3} \sqrt{\frac{y^2 - 9}{2y^2 + 7y + 3}}$$

$$\lim_{y \rightarrow -3} \sqrt{\frac{(y+3)(y-3)}{2(y+\frac{1}{2})(y+3)}}$$

$$\lim_{y \rightarrow -3} \frac{y-3}{2y+1}$$

$$\lim_{y \rightarrow -3} \frac{-3-3}{2(-3)+1}$$

$$\lim_{y \rightarrow -3} \sqrt{\frac{6}{-5}}$$

$$\lim_{y \rightarrow -3} \sqrt{\frac{6}{5}}$$

$$40) \lim_{t \rightarrow 3/2} \sqrt{\frac{8t^3 - 27}{4t^2 - 9}}$$

$$\lim_{t \rightarrow 3/2} \sqrt{\frac{8(3/2)^3 - 27}{4(3/2)^2 - 9}}$$

$$\lim_{t \rightarrow 3/2} \sqrt{\frac{8 \cdot 27/8 - 27}{4 \cdot (9/4) - 9}}$$

$$\lim_{t \rightarrow 3/2} \sqrt{\frac{0}{0}}$$

$$\lim_{t \rightarrow 3/2} \frac{0}{0} \text{ Indeterminado}$$

$$\lim_{t \rightarrow 3/2} \sqrt{\frac{8t^3 - 27}{4t^2 - 9}}$$

$$\lim_{t \rightarrow 3/2} \frac{(2t-3)(4t^2+6t+9)}{(2t-3)(2t+3)}$$

$$\lim_{t \rightarrow 3/2} \frac{4t^2 + 6t + 9}{2t + 3}$$

$$\lim_{t \rightarrow 3/2} \frac{4(3/2)^2 + 6(3/2) + 9}{2(3/2) + 3}$$

$$\lim_{t \rightarrow 3/2} \frac{9 + 9 + 9}{3 + 3}$$

Time to
make
the
magic
happen

$$\lim_{t \rightarrow \frac{3}{2}}$$

$$\frac{27}{6}$$

$$\lim_{t \rightarrow \frac{3}{2}}$$

$$\frac{9}{2}$$

$$42) \lim_{x \rightarrow -1}$$

$$\frac{\sqrt{x+5} - 2}{x+1}$$

$$\lim_{x \rightarrow -1}$$

$$\frac{\sqrt{-1+5} - 2}{-1+1}$$

$$\lim_{x \rightarrow -1}$$

$$\frac{\sqrt{4} - 2}{0}$$

$$\lim_{x \rightarrow -1}$$

$$\frac{2-2}{0}$$

$$\lim_{x \rightarrow -1}$$

$$\frac{0}{0} \text{ Indeterminado}$$

$$\frac{\sqrt{x+5} - 2}{x-1} \cdot \frac{\sqrt{x+5} + 2}{\sqrt{x+5} + 2}$$

$$\frac{(\sqrt{x+5} - 2)(\sqrt{x+5} + 2)}{(x-1)(\sqrt{x+5} + 2)}$$

$$(\sqrt{x+5})^2 - 2^2 = (x+5) - 4 = x+1$$

$$\frac{x+1}{(x-1)(\sqrt{x+5} + 2)}$$

$$\frac{(x-1)+2}{(x-1)(\sqrt{x+5} + 2)}$$

$$\frac{x+1}{(x-1)(\sqrt{x+5} + 2)}$$

$$\frac{1}{\sqrt{x+5} + 2}$$

$$\frac{1}{\sqrt{-1+5} + 2}$$

$$\lim_{x \rightarrow -1}$$

$$\frac{1}{\sqrt{4} + 2}$$

$$\Rightarrow \frac{1}{2+2}$$

$$= \frac{1}{4}$$

Time to
make
the
magic
happen

$$43) \lim_{h \rightarrow 0} \frac{\sqrt{h+2} - \sqrt{2}}{h}$$

$$\lim_{h \rightarrow 0} \frac{\sqrt{0+2} - \sqrt{2}}{0}$$

$$\lim_{h \rightarrow 0} \frac{\sqrt{2} - \sqrt{2}}{0}$$

$$\lim_{h \rightarrow 0} \frac{0}{0} \quad \text{Indeterminado}$$

$$\lim_{h \rightarrow 0} \frac{\sqrt{h+2} - \sqrt{2}}{h} \cdot \frac{\sqrt{h+2} + \sqrt{2}}{\sqrt{h+2} + \sqrt{2}}$$

$$\lim_{h \rightarrow 0} \frac{(\sqrt{h+2})^2 - (\sqrt{2})^2}{h(\sqrt{h+2} + \sqrt{2})}$$

$$\lim_{h \rightarrow 0} \frac{(\sqrt{h+2})^2 - (\sqrt{2})^2}{h(\sqrt{h+2} + \sqrt{2})} = \frac{(h+2) - 2}{h(\sqrt{h+2} + \sqrt{2})} = \frac{h}{h(\sqrt{h+2} + \sqrt{2})}$$

$$\lim_{h \rightarrow 0} \frac{1}{\sqrt{h+2} + \sqrt{2}}$$

$$\lim_{h \rightarrow 0} \frac{1}{\sqrt{0+2} + \sqrt{2}}$$

$$\lim_{h \rightarrow 0} \frac{1}{\sqrt{2} + \sqrt{2}}$$

$$\lim_{h \rightarrow 0} \frac{1}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

$$\lim_{h \rightarrow 0} \frac{\sqrt{2}}{4}$$