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COMITAN DE DOMINGUES CHIAPAS O8 DE OCUTUBRE 2021

①

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1. $\lim\limits_{x \to 3} x^2 = 3^2 = 9$

2. $\lim\limits_{x \to 0} (4x + 5) = (4(0) + 5) \ 0 + 5 = 5$

3. $\lim\limits_{x \to 2} (5x - 2) = (5(-2) - 2) = -10 - 2 = 12$

4. $\lim\limits_{x \to 4} 6 = 6$

5. $\lim\limits_{x \to 1/2} x = 1/2$

6. $\lim\limits_{x \to 2} \dfrac{2x^2 + x - 1}{4x - 2} = \dfrac{2(2)^2 + 2 - 1}{4(2) - 2} = \dfrac{9}{6} = \dfrac{3}{2}$

7. $\lim\limits_{x \to 2} (x^2 - 4) = (2^2 - 4) = 4 - 4 = 0$

8. $\lim\limits_{x \to -1} 5x = 5(-1) = -5$

9. $\lim\limits_{x \to -2} 3x^2 = 3(-2)^2 = 3(4) = 12$

10. $\lim\limits_{x \to 2} (4x^2 - 8x + 5) = 4(2)^2 - 8(2) + 5 = 4(4) - 16 + 5 = 5$

11. $\lim\limits_{x \to 3} \dfrac{x + 1}{2x + 3} = \dfrac{3 + 1}{2(3) + 3} = \dfrac{4}{9} = 0.444$

②

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12 $\lim\limits_{x \to 2} \sqrt{3x^2+4} = \sqrt{3(2)^2+4} = \sqrt{3(4)+4} = \sqrt{16}$

$= 4$

12 $\lim\limits_{x \to 0} \dfrac{8x^2-2x}{2x} = \dfrac{8(0)^2-2(0)}{2(0)} = \dfrac{8(0)-2(0)}{2(0)} = \dfrac{0}{0}$

$\lim\limits_{x \to 0} \dfrac{2x(4x-1)}{2x} =$

$\lim\limits_{x \to 0} \dfrac{x(4x-1)}{x}$

2 $\lim \dfrac{x^2-1}{x+1} = \dfrac{-1^2-1}{-1+1} = \dfrac{1-1}{-1+1} = \dfrac{0}{0}$

$\lim \dfrac{(x-1)(x+1)}{x+1}$

$\lim\limits_{x \to 1} (x-1) \quad -1-1 = -2$

3 $\lim\limits_{x \to 0} \dfrac{5x}{x} = \dfrac{5(0)}{0} = \dfrac{0}{0}$

$\lim\limits_{x \to 0} \dfrac{5x}{x} = 5$

4 $\lim\limits_{x \to -5} \dfrac{x+5}{x^2-25} = \dfrac{-5+5}{(-5)^2-25} = \dfrac{0}{0}$

$\lim\limits_{x \to -5} \dfrac{x+5}{(x-5)(x+5)}$ $\lim\limits_{x \to -5} \dfrac{1}{x-5} = \dfrac{1}{-5-5} = \dfrac{1}{-10} = \dfrac{1}{10}$

④

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$5 \lim\limits_{x \to 3} \dfrac{x^2 + 4x - 21}{x - 3} = \dfrac{3^2 + 4(3) - 21}{3 - 3} = \dfrac{0}{0}$

$\lim\limits_{x \to 3} \dfrac{x^2 + 7x - 3x - 21}{x - 3}$

$\lim\limits_{x \to 3} \dfrac{x(x+7) - 3x - 21}{x - 3}$

$\lim\limits_{x \to 3} \dfrac{x(x+7 - 3(x+7)}{x - 3}$ ...

$\lim\limits_{x \to 3} \dfrac{(x+7 \,(x-3)}{x-3}$

$\lim\limits_{x \to 3} (x+7) = 3+7 = 10$

$6 \lim\limits_{x \to 4} \dfrac{x^2 + 5x + 4}{x + 4} \quad \dfrac{(-4)^2 + 5(-4) + 4}{-4 + 4} = \dfrac{0}{0}$

$\lim\limits_{x \to -4} \dfrac{x^2 + 4x + x + 4}{x + 4}$

$\lim\limits_{x \to -4} \dfrac{x(x+4) + x + 4}{x + 4}$

$\lim\limits_{x \to -4} \dfrac{(x+4)(x+1)}{x + 4}$

$\lim\limits_{x \to 4} x + 1 = -4 + 1 = -3$

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7 $\lim\limits_{x \to 2} \dfrac{x^2 - 8 + 12}{x - 2} = \dfrac{2^2 - 8(2) + 12}{2 - 2} = \dfrac{0}{0}$

$\lim \dfrac{x^2 - 2x - 6x + 2}{x - 2}$

$\lim\limits_{x \to 2} \dfrac{x(x-2) - 6x + 2}{x - 2}$

$\lim\limits_{\to} \dfrac{x(x-2) - 6(x+2}{x - 2}$

$\lim\limits_{-2} \dfrac{(x-2)(x-6)}{x-2}$

$\lim\limits_{\to 2} (x-6) = 2 - 6 = -4$

8 $\lim \dfrac{x^3 + 1}{x + 1} = \dfrac{1^3 + 1}{-1 + 1} = \dfrac{0}{0}$

$\lim\limits_{x \to -1} \dfrac{(x+1)(x^2 + 1)}{x + 1}$

$\lim\limits_{x \to -1} x^2 + x + 1 = (-1)^2 - (-1) + 1 = 3$