C12 - 1.4 - Limit Algebra Hmk

$$\lim_{x\to a} \frac{5-g(x)}{\left(f(x)\right)^2}$$

$$\lim_{x\to a} x^2 f(x)$$

Find the following, given : $\lim_{x\to a} f(x) = 2$ $\quad \lim_{x\to a} f(x) = -3$

$$\lim_{x\to a} 2f(x) - g(x) = \qquad \lim_{x\to a} -f(x)g(x) = \qquad \lim_{x\to a} \frac{f(x)}{g(x)+5} = \qquad \lim_{x\to a} \left(f(x) + 2g(x) - 3\right)$$

$$\lim_{x\to a} \sqrt{3 - f(x)g(x)} \qquad \lim_{x\to a} \left(f(x) + g(x)\right)^2 = \qquad \lim_{x\to a} f^2(x) + g^2(x) = \qquad \lim_{x\to a} \sqrt{4 - f(x)(g(x)}$$

Find the Limits

$$\lim_{x\to 3} x + 2 = \qquad \lim_{x\to -3} (x^2 + 5x + 1) = \qquad \lim_{x\to 1} \frac{x^4 + 5x + 1}{x+1} = \qquad \lim_{x\to -2} \sqrt{x^2+5} =$$

$$\lim_{x\to 0} sinx = \qquad \lim_{x\to -3} \frac{x+3}{x^2-9} = \qquad \lim_{x\to 5} 2x^2 + 1 = \qquad \lim_{x\to -1} x^3 - 2x^2 - x + 1$$

Find the Limits

$$\lim_{x\to -3} \frac{1}{x+3} = \qquad \lim_{x\to 3} \frac{x+3}{x^2-9} = \qquad \lim_{x\to 0} \frac{1}{x^2} = \qquad \lim_{x\to -2} \frac{x+2}{x^2-4} = \qquad \lim_{x\to \frac{1}{2}} \frac{2x^2+5x-3}{2x-1} =$$

$$\lim_{x\to 3} \frac{x^2-5x+6}{x-3} = \qquad \lim_{x\to 4} \frac{x^3-16x}{x-4} = \qquad \lim_{x\to \frac{1}{2}} \frac{2x^2+5x-3}{2x-1} = \qquad \lim_{x\to 2} \frac{x^3-8}{x-2} =$$

$$\lim_{x\to -3} \frac{x+3}{x^3+27} = \qquad \lim_{x\to 1} \frac{x^4-1}{x-1} = \qquad \lim_{x\to 4} \frac{x^3-16x}{x-4} =$$

$$\lim_{x\to -2} \frac{x^3+2x^2+x+2}{x+2} = \qquad \lim_{x\to -1} \frac{x^3+2x^2-5x-6}{x+1} = \qquad \lim_{x\to 2} \frac{x^3+2x^2-4x-8}{x^2-4}$$

$$\lim_{x\to -4} \frac{9-(x+1)^2}{x+4} = \qquad \lim_{x\to -4} \frac{(x+2)^3-8}{x} = \qquad \lim_{x\to 0} \frac{1-(x+1)^4}{x} = \qquad \lim_{x\to -1} \frac{(x-1)^3+8}{x+1}$$

$$\lim_{x\to 0} \frac{\frac{1}{x+2} - \frac{1}{2}}{x} = \qquad \lim_{x\to 0} \frac{\frac{1}{(x+2)^2} - \frac{1}{4}}{x}$$

$$\lim_{x\to 0} \frac{\frac{1}{x+3} - \frac{1}{3}}{x} \qquad \lim_{x\to 0} \frac{\frac{1}{(x+4)^2} - \frac{1}{16}}{x} = \qquad \lim_{x\to 16} \frac{\sqrt{x}-4}{x-16} = \qquad \lim_{x\to 9} \frac{\sqrt{x}-3}{x-9} =$$

$$\lim_{x\to 17} \frac{\sqrt{x-1}-4}{x-17} = \qquad \lim_{x\to 6} \frac{\sqrt{x+3}-3}{x-6} = \qquad \lim_{x\to 16} \frac{16-x}{4-\sqrt{x}} = \qquad \lim_{x\to 16} \frac{x-16}{4-\sqrt{x}}$$

C12 - 1.4 - Limit Algebra Hmk

$\lim_{x \to 3} \dfrac{\sqrt{x+1}-2}{\sqrt{x-2}-1} =$

$\lim_{x \to 4} \dfrac{\frac{1}{\sqrt{x}}-\frac{1}{2}}{x-4} =$

$\lim_{x \to 3} \dfrac{\frac{1}{\sqrt{x+3}}-\frac{1}{3}}{x^2-9} =$

$\lim_{x \to 4} \dfrac{\frac{1}{\sqrt{x}}-\frac{1}{2}}{x-4}$

$\lim_{x \to \frac{\pi}{3}} \dfrac{sinx}{3x} =$

$\lim_{x \to \frac{\pi}{6}} \dfrac{cosx}{12x} =$

$\lim_{x \to \frac{\pi}{2}^-} secx =$

$\lim_{x \to \frac{\pi}{3}} tanx =$

$\lim_{x \to 0^-} cscx =$

$\lim_{x \to \pi^+} secx =$

$\lim_{x \to 0^-} cotx =$

$\lim_{x \to \frac{\pi}{4}^+} tanx =$

$\lim_{h \to 0} \dfrac{(x+h)^2-x^2}{h} =$

$\lim_{h \to 0} \dfrac{\frac{1}{x+h}-\frac{1}{x}}{h} =$

$\lim_{h \to 0} \dfrac{\sqrt{x+h}-\sqrt{x}}{h} =$

$\lim_{x \to 4} \dfrac{\frac{1}{\sqrt{x}}-\frac{1}{2}}{x-4}$

$\lim_{x \to 0} \dfrac{sin2x}{x} =$

$\lim_{x \to 0} \dfrac{sin4x}{4x} =$

$\lim_{x \to 0} \dfrac{sin3x}{sin2x} =$

$\lim_{x \to 0} \dfrac{sin2x}{4x} =$

$\lim_{x \to 0} \dfrac{tan4x}{4x} =$

$\lim_{x \to 0} \dfrac{tan4x}{tan3x} =$

$\lim_{x \to 0} \dfrac{sin3x}{x^2+x} =$

$\lim_{x \to 0} \dfrac{\sin^2 3x}{x^2} =$

$\lim_{x \to 0} \dfrac{\sin(sinx)}{x} =$