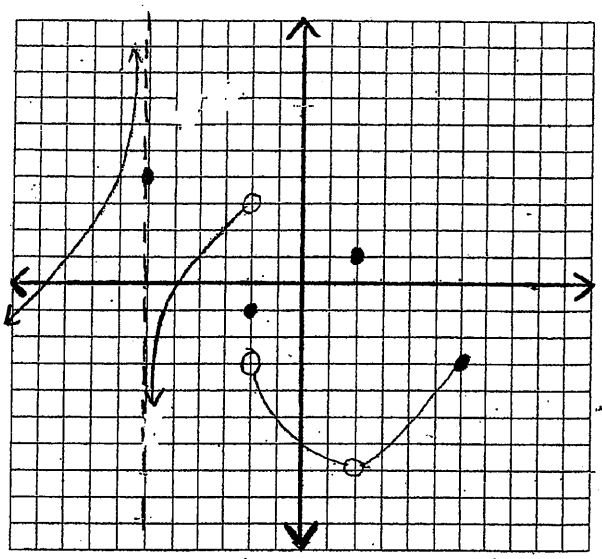
Limits 1.2-1.3 Quiz Review



1) Find value of given quantity

a) $f(-7) =$

b) $f(-6) =$

c) $\lim_{x \to -6} f(x) =$

d) $\lim_{x \to -2} f(x) =$

e) $\lim_{x \to 2} f(x) =$

f) $f(2) =$

g) $f(-2) =$

h) $\lim_{x \to 6} f(x) =$

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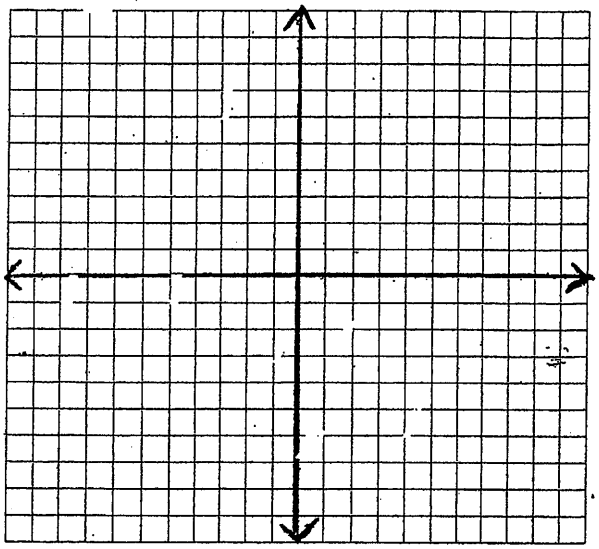
2) Identify values of c where $\lim_{x \to c} f(x)$ exists



3) Sketch graph of function satisfying the given values.

a) $f(-3) = 1$

b) $\lim_{x \to -3} f(x) = -\infty$

c) $f(2) = 3$

d) $\lim_{x \to 2} f(x) = 7$

e) $f(6) = 5$

f) $\lim_{x \to 6} f(x) =$ DNE

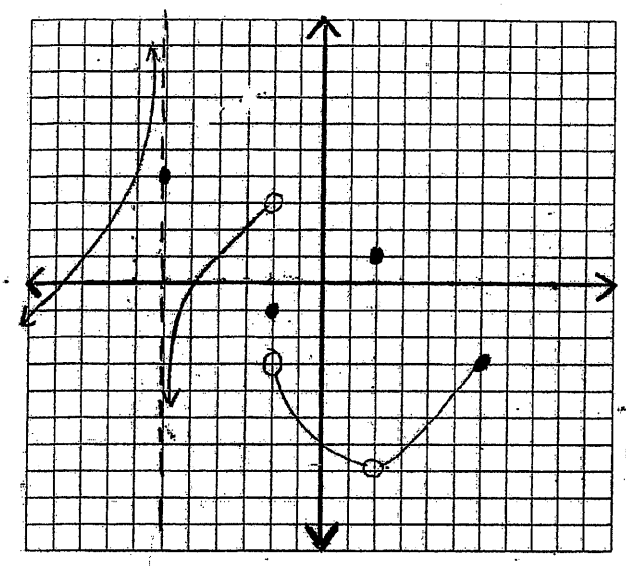
4. Find $\lim_{x \to 3} \left[\dfrac{\frac{3}{2} - \frac{3}{x-1}}{2x^2 - 5x - 3} \right]$

5. Find $\lim_{x \to 0} \left[\dfrac{\sqrt{x+16} - 4}{2x} \right]$

6. Find $\lim_{x \to 3/2} \left[\dfrac{-10x^2 + 11x + 6}{3 - 2x} \right]$

Limits 1.a-1.c Quiz Review

Solution Key



1) Find value of given quantity

a) $f(-7) = 4$

b) $f(-6) = 4$

c) $\lim_{x\to -6} f(x) = \text{DNE}$

d) $\lim_{x\to -2} f(x) = \text{DNE}$

e) $\lim_{x\to 2} f(x) = -7$

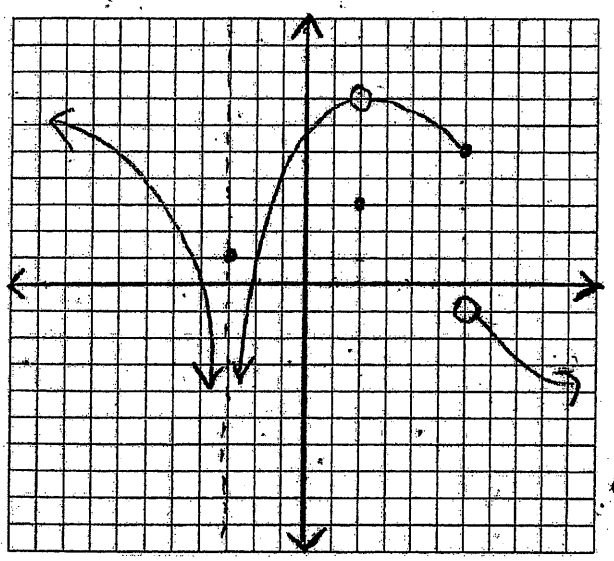
f) $f(2) = 1$

g) $f(-2) = -1$

h) $\lim_{x\to 6} f(x) = \text{DNE}$

2) Identify values of c where $\lim_{x\to c} f(x)$ exists

$(-\infty, -6) \cup (-6, -2) \cup (-2, 6)$



3) Sketch graph of function satisfying the given values.

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c) $f(2) = 3$

d) $\lim_{x\to 2} f(x) = 7$

e) $f(6) = 5$

f) $\lim_{x\to 6} f(x) = \text{DNE}$

4. Find $\lim_{x\to 3}\left[\dfrac{\frac{3}{2}-\frac{3}{x-1}}{2x^2-5x-3}\right]$

$\lim_{x\to 3} \dfrac{3(x-1)-3(2)}{2(x-1)}$

$\dfrac{}{(2x+1)(x-3)}$

$\lim_{x\to 3} \dfrac{3x-3-6}{2(x-1)}$

$\dfrac{}{(2x+1)(x-3)}$

$\lim_{x\to 3} \dfrac{3(x-3)}{2(x-1)} \cdot \dfrac{1}{(2x+1)(x-3)}$

$\dfrac{3}{2(2)(7)} = \boxed{\dfrac{3}{28}}$

5. Find $\lim_{x\to 0}\left[\dfrac{\sqrt{x+16}-4}{2x}\right]$

$\lim_{x\to 0} \dfrac{\sqrt{x+16}-4}{2x} \cdot \dfrac{\sqrt{x+16}+4}{\sqrt{x+16}+4}$

$\lim_{x\to 0} \dfrac{x+16-16}{2x(\sqrt{x+16}+4)}$

$= \dfrac{1}{2(\sqrt{0+16}+4)}$

$= \dfrac{1}{2(8)} = \boxed{\dfrac{1}{16}}$

6. Find $\lim_{x\to 3/2^-}\left[\dfrac{-10x^2+11x+6}{3-2x}\right]$

$-(10x^2-11x-6)$

$\lim_{x\to 3/2^-} \dfrac{-(5x+2)(2x-3)}{(3-2x)}$

$\lim_{x\to 3/2^-} \dfrac{-(5x+2)\cdot(-1)(3-2x)}{3-2x}$

$\lim_{x\to 3/2^-} (5x+2)(3-2x)$

$= 5(3/2)+2$

$= \dfrac{15}{2} + \dfrac{4}{2} = \boxed{\dfrac{19}{2}}$