ICM Name_____ ID: 1

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Limits Practice- (C-F Range)

Date_____ Period____

Evaluate each limit- HINT: x values are going to infinity or negative infinity

1) $\lim_{x\to-\infty}\left(x^4 - x^2 + 4\right)$

2) $\lim_{x\to\infty}\left(x^3 - 13x^2 + 56x - 80\right)$

Evaluate each limit. (HINT- direct substitution)

3) $\lim_{x\to2} -\sqrt[3]{x-2}$

4) $\lim_{x\to2}\left(-x^3 + 4x^2 - 2\right)$

Evaluate each limit. (Hint- If direct substitution doesn't work, FACTOR)

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

6) $\lim_{x\to-2} -\dfrac{x^2-x-6}{x+2}$

Evaluate each limit. (Hint- If direct substitution doesn't work, use BUTTERFLY METHOD)

7) $\lim_{x\to-3} \dfrac{x}{\dfrac{1}{3+x} - \dfrac{1}{3}}$

8) $\lim_{x\to-2} \dfrac{x}{\dfrac{1}{2+x} - \dfrac{1}{2}}$

Evaluate each limit. (Hint- If direct substitution doesn't work, multiply by the CONJUGATE)

9) $\lim_{x\to4} \dfrac{x-4}{\sqrt{x}-2}$

10) $\lim_{x\to1} \dfrac{x-1}{\sqrt{x}-1}$

Piecewise Functions- Evaluate each limit.

11) $\lim_{x\to-2^-} f(x),\ f(x) = \begin{cases} -\dfrac{x}{2} + \dfrac{7}{2}, & x \le -2 \\ 3, & x > -2 \end{cases}$

12) $\lim_{x\to1^+} f(x),\ f(x) = \begin{cases} -\dfrac{x}{2} + 2, & x < 1 \\ -2x + 5, & x \ge 1 \end{cases}$

Evaluate each limit.(Hint- use the table in your calculator)

13) $\lim_{x\to-2^+} \dfrac{x+3}{x^2+4x+4}$

14) $\lim_{x\to3^+} -\dfrac{4x}{x-3}$

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Answers to Limits Practice- (C-F Range) (ID: 1)

1) ∞
2) ∞
3) 0
4) 6
5) 1
6) 5
7) 0
8) 0
9) 4
10) 2
11) $\frac{9}{2}$
12) 3
13) ∞
14) $-\infty$

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