Limits to "As x approaches a number" HW **Name:** _____

Find the following limits algebraically:

1) $\lim_{x\to 3}\left(x^3-2x^2\right)=$

2) $\lim_{x\to 2}\frac{x^2+2x+4}{x+2}=$

3) $\lim_{x\to 0}\frac{1}{x^2}=$

4) $\lim_{x\to -3}\sqrt{x-3}=$

5) $\lim_{x\to 0}\frac{\left(5+x\right)^2-25}{x}=$

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6) $\lim_{x\to 3}\left(\frac{\frac{1}{x}-\frac{1}{3}}{x-3}\right)=$

7) $\lim_{x\to -5}\frac{x^2-7x+14}{x-5}=$

8) $\lim_{x\to 0}\frac{x}{x^2-x}=$

9) $\lim_{x\to 12}\frac{\sqrt{x-3}-3}{x-12}=$

10) $\lim_{x\to 2}\frac{x^3-8x+8}{x+8}=$

11) $\lim_{x\to 2}(6)=$

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12) $\lim_{x\to -2} \frac{x^2+2x+4}{x+2} =$

13) $\lim_{x\to 0} \frac{7}{x^2+7x-7} =$

14) $f(x) = \begin{cases} x-1 & x \le 0 \\ x+5 & x > 0 \end{cases}$

$\lim_{x\to 0} f(x) =$