Pre Calc BC **Limits** **Name**_____

Find the limits below algebraically. Verify with your calculator

1. $\lim_{x\to 5}\sqrt{x^3-3x-1}$

2. $\lim_{x\to 3}\dfrac{x^2-2x}{x+1}$

3. $\lim_{x\to 0}\dfrac{6x-9}{x^3-12x-3}$

4. $\lim_{x\to 4}\dfrac{x^2-16}{x-4}$

5. $\lim_{x\to -2}\dfrac{x^3+8}{x+2}$

6. $\lim_{x\to \infty}\dfrac{3x+1}{2x-5}$

7. $\lim_{x\to -\infty}\dfrac{1}{x-12}$

8. $\lim_{x\to \infty}\dfrac{x^3-2x}{97x^2-5}$

9. $\lim_{x\to -\infty}\sqrt{5-x}$

10. $\lim_{x\to \infty}\dfrac{1000}{x}$

11. $\lim_{x\to 0}\dfrac{1000}{x}$

12. $\lim_{x\to 0}\dfrac{x^2-2}{x-2}$

13. $\lim_{x\to 2}\dfrac{x^2-2}{x-2}$

14. $\lim_{x\to \infty}\dfrac{x^2-2}{x-2}$

15. $\lim_{x\to -\infty}\dfrac{x^2-2}{x-2}$

16. $\lim_{x\to \infty}\dfrac{\sqrt{x^3-1}}{2x}$

17. $\lim_{x\to 0}\begin{cases}2x-4, & x\geq 2\\ x^2+1, & x<2\end{cases}$

18. $\lim_{x\to 2}\begin{cases}2x-4, & x\geq 2\\ x^2+1, & x<2\end{cases}$

19. $\lim_{x\to \infty}\dfrac{2x^2-6}{(x-2)^2}$

20. $\lim_{x\to 0}\pi$