

Find the limit

12. $\lim_{x \rightarrow -2} (x - 2)$

$-2 - 2 = -4$

13. $\lim_{x \rightarrow 1} -4 = -4$

14. $\lim_{x \rightarrow 3^+} -\frac{x-1}{x^2+2x-3}$

$-\frac{x-1}{(x+3)(x-1)} = \frac{-1}{x+3} = \frac{-1}{6}$

15. $\lim_{x \rightarrow 0} \left(-\frac{x^2}{2} + x + \frac{1}{2}\right)$

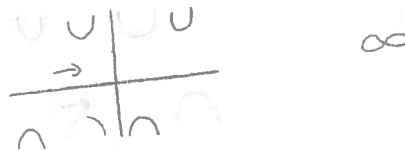
$-\frac{0^2}{2} + 0 + \frac{1}{2} = \frac{1}{2}$

16. $\lim_{x \rightarrow -1^-} -\frac{2x}{x+1}$



$-\infty$

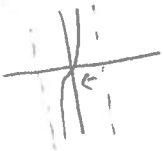
17. $\lim_{x \rightarrow 0^-} -\csc x$



∞

18. $\lim_{x \rightarrow 0^+} 2 \tan x$

$2 \tan(0) = 0$



19. $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$

this is a special case & will not be on the quiz

20. $\lim_{x \rightarrow 0} f(x), f(x) = \begin{cases} -x^2 + 4x - 4, & x \leq 3 \\ -4, & x > 3 \end{cases}$

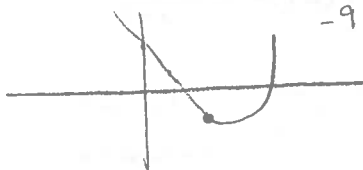
$-(0)^2 + 4(0) - 4 = -4$

21. $\lim_{x \rightarrow 3} f(x), f(x) = \begin{cases} -2x + 3, & x < 3 \\ -x^2 + 10x - 24, & x \geq 3 \end{cases}$

$-(3)^2 + 10(3) - 24$

$-9 + 30 - 24$

$30 - 33 = -3$



(-3)