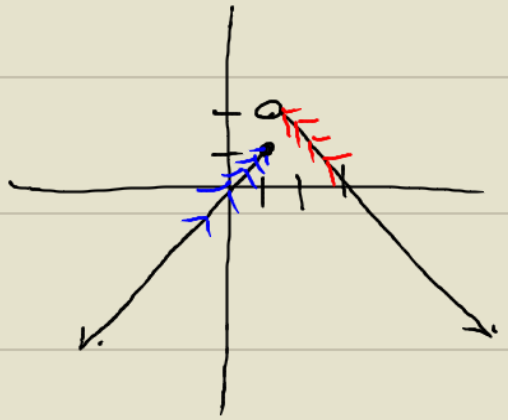
4.



$c = 1$

a) $\lim_{x \to c^+} f(x) = 2$ (FROM RIGHT HAND SIDE)

b) $\lim_{x \to c^-} f(x) = 1$ (FROM LEFT HAND SIDE)

c) $\lim_{x \to c} f(x) =$ DNE (DOES NOT EXIST)

DIRECT SUBSTITUTION

6. $\lim_{x \to -3} (x^2 - 3x)$

$= (-3)^2 - 3(-3)$

$= 9 + 9$

$= \boxed{18}$

7. $\lim_{x \to -1} \frac{4x-1}{3-x}$

$= \frac{4(-1)-1}{3-(-1)}$

$= \frac{-4-1}{3+1}$

$= \boxed{\frac{-5}{4}}$

8. $\lim_{x \to 4} \frac{\frac{1}{x+3} - \frac{1}{3}}{x}$

$= \frac{\frac{1}{4+3} - \frac{1}{3}}{4}$

$= \frac{\frac{1}{7} - \frac{1}{3}}{4}$

$= \frac{\frac{3}{21}\left(\frac{1}{7}\right) - \frac{7}{21}\left(\frac{1}{3}\right)}{21(4)}$

$= \frac{3-7}{84}$

$= \frac{-4}{84}$

$= \boxed{\frac{-1}{21}}$