

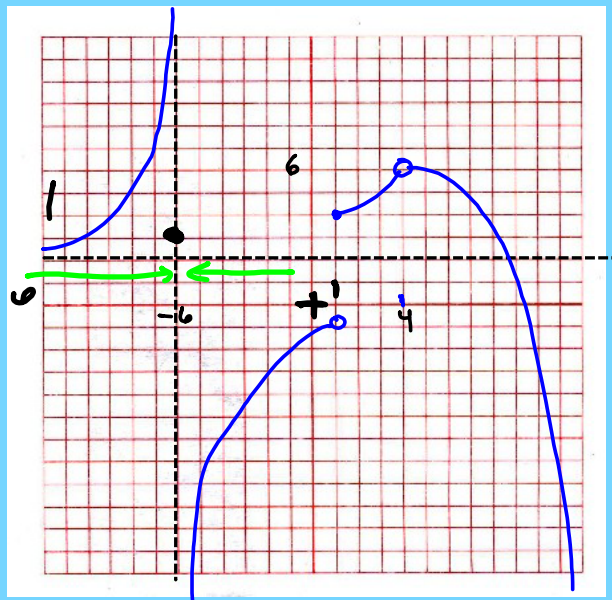
LIMITS

$$\lim_{x \rightarrow -6^-} f(x) = +\infty$$

$$\lim_{x \rightarrow -6^+} f(x) = -\infty$$

$$\lim_{x \rightarrow -6} f(x) = \text{DNE}$$

$$f(-6) = \text{undef.}$$



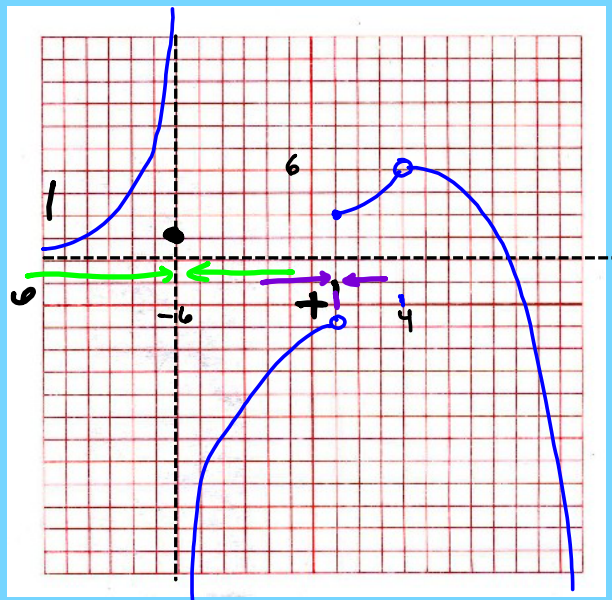
LIMITS

$$\lim_{x \rightarrow 1^-} f(x) = -1$$

$$\lim_{x \rightarrow 1^+} f(x) = 4$$

$$\lim_{x \rightarrow 1} f(x) = \text{DNE}$$

$$f(1) = 4$$



LIMITS

$$\lim_{x \rightarrow 4^-} f(x) = 6$$

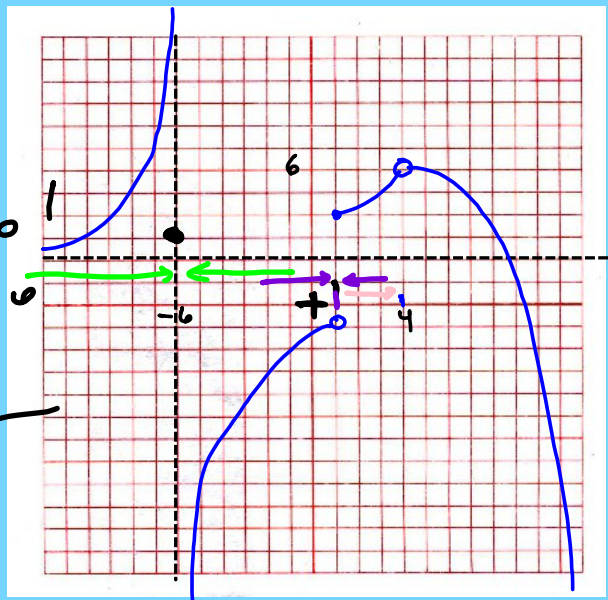
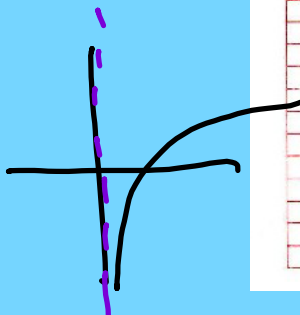
$$\lim_{x \rightarrow 4^+} f(x) = 6$$

$$\lim_{x \rightarrow 4} f(x) = 6$$

$$f(4) = \text{undef}$$

$$\lim_{x \rightarrow -\infty} f(x) = 2$$

$$\lim_{x \rightarrow \infty} f(x) = -\infty$$



Domain: $[-5, \infty)$

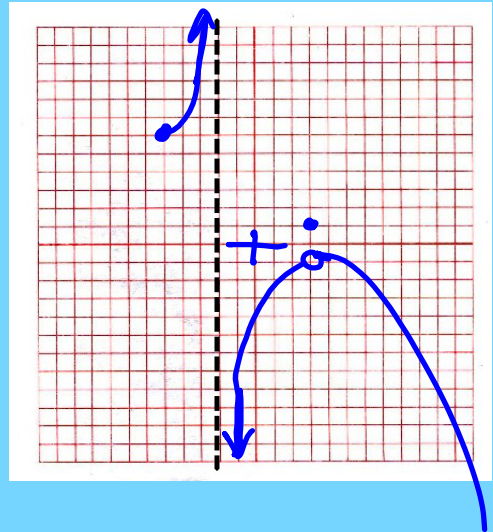
$f(-2) = \text{undef}$

$f(3) = 1$

$\lim_{x \rightarrow -2^-} f(x) = +\infty$

$\lim_{x \rightarrow -2} f(x) = \text{DNE}$

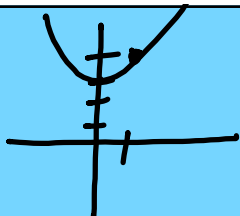
$\lim_{x \rightarrow 3} f(x) = -1$



$$\lim_{x \rightarrow 1} x^2 + 3$$

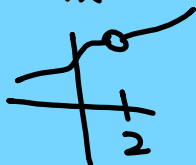
$$= (1)^2 + 3$$

$$= 4$$



$$\lim_{x \rightarrow 2} \frac{3x^2 - 4x - 4}{x - 2} = \frac{0}{0} \quad \text{indeterminate}$$

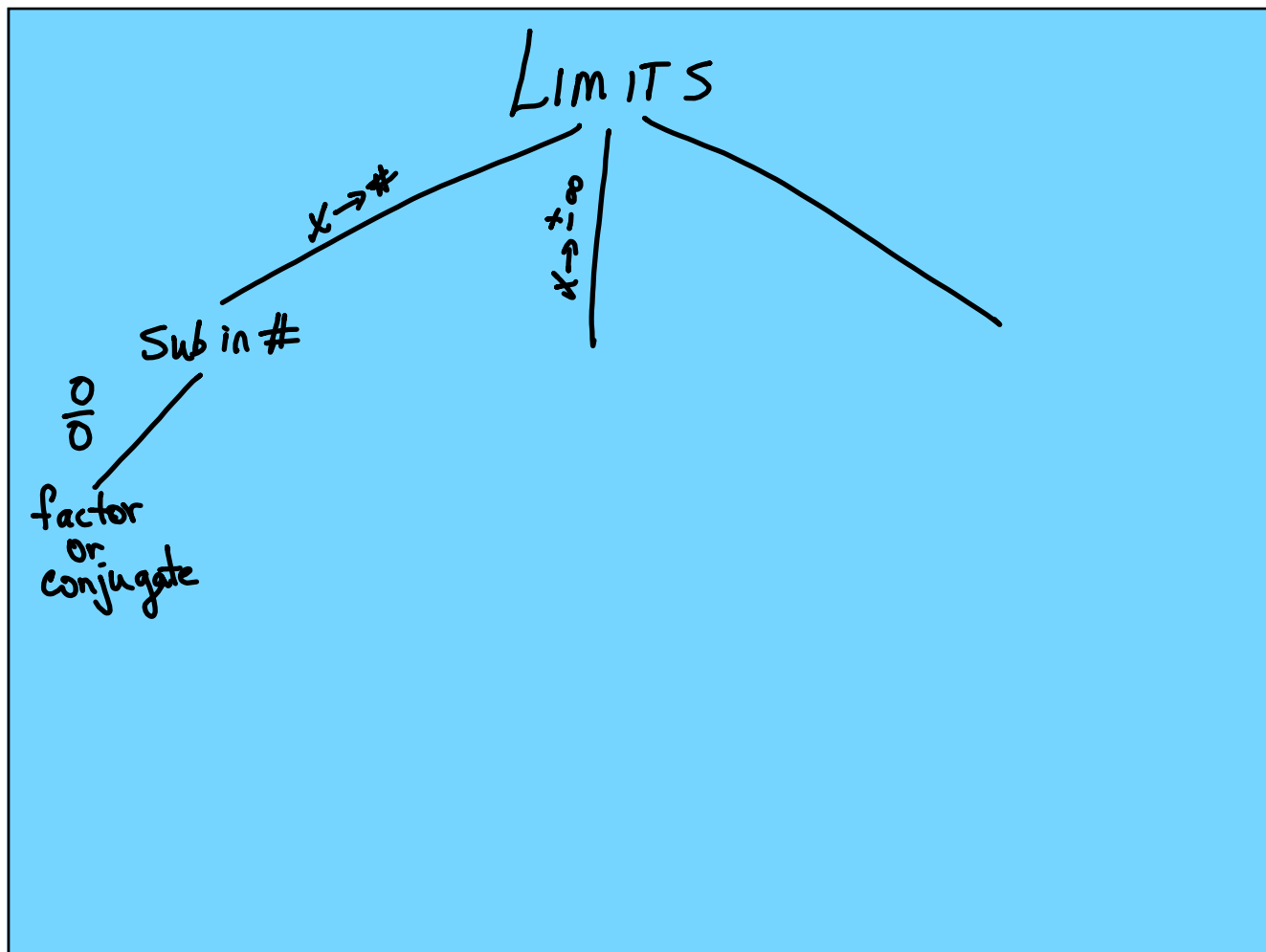
$$\lim_{x \rightarrow 2} \frac{(3x+2)(\cancel{x-2})}{\cancel{x-2}} = \boxed{8}$$



$$\lim_{x \rightarrow 3} \frac{x^2 - 4x + 3}{x^3 - 27} = \frac{0}{0}$$

$$\lim_{x \rightarrow 3} \frac{\cancel{(x-3)}(x-1)}{\cancel{(x-3)}(x^2 + 3x + 9)}$$

$$= \frac{2}{9+9+9} = \boxed{\frac{2}{27}}$$



$$\lim_{h \rightarrow 0} \frac{\sqrt{9+h} - 3}{h} = \frac{0}{0}$$

$$\lim_{h \rightarrow 0} \frac{\cancel{9} + \cancel{h} = 9}{\cancel{h} (\sqrt{9+h} + 3)} = \frac{1}{\sqrt{9+0} + 3} = \boxed{\frac{1}{6}}$$