

①

$x = \# \text{ of units}$

$$p(x) = 135 - \frac{x}{34}$$

$$R(x) = x \left[p(x) \right]$$

$$R(x) = x \left(135 - \frac{x}{34} \right)$$

$$= 135x - \frac{x^2}{34}$$

$$135 - \frac{x}{17} = 0 \quad 135 = \frac{x}{17} \cdot 17$$

$$\frac{x}{17} \cup$$

$$x = 2295$$

$$y = 16t^2$$

$$\textcircled{3} \quad \frac{\Delta y}{\Delta x} = \frac{256 - 0}{4 - 0} = \textcircled{64}$$

$$\begin{array}{r|l} t & y \\ \hline 0 & 0 \\ 4 & 256 \end{array}$$

$$\textcircled{4} \quad \frac{dy}{dx} = 32t = 32(5) = \textcircled{160}$$

$$\textcircled{5} \quad \lim_{x \rightarrow 6} \frac{x+6}{(x-6)^2}$$

Does
not
exist

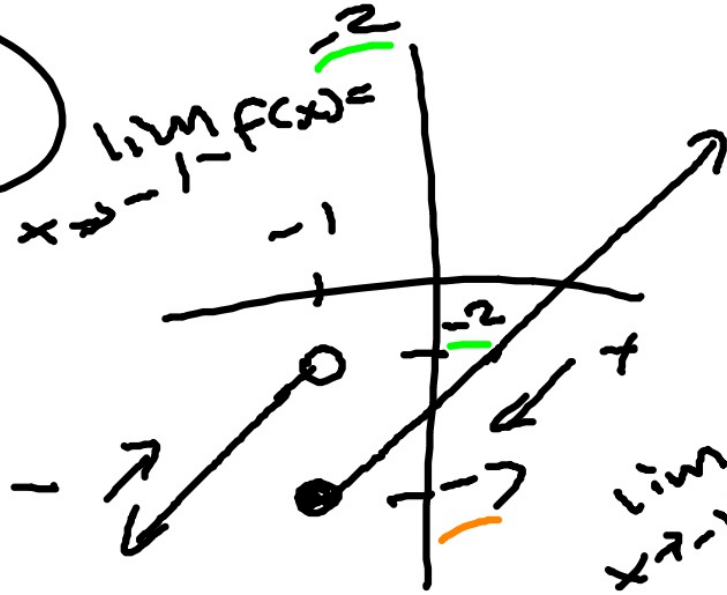
$$\textcircled{6} \quad \lim_{x \rightarrow -6} \frac{(x+6)(x-6)}{x+6}$$

$$= \lim_{x \rightarrow -6} x - 6 = -6 - 6 = -12$$

7

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} = (1) \left(\frac{1}{4} \right) = \frac{1}{4}$$

8



$\lim_{x \rightarrow -1^-} f(x) = 2$

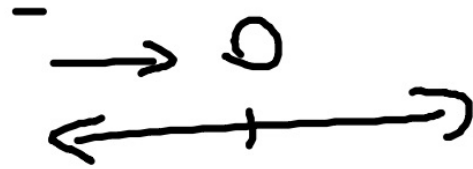
9

$\lim_{x \rightarrow 0} f(x)$
does not exist

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

does not exist

10



test
 $x = -1$

$$\frac{7(-1) = -7}{|-1| \sqrt{x^2 - 4x - 4}}$$

$$\lim_{x \rightarrow 0^-} \frac{7x}{|x|} = 7$$

32
 D.N.E.

11

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

$$\begin{aligned} &(-4)^2 - 4(-4) \\ &16 + 16 \\ &\underline{32} \end{aligned}$$

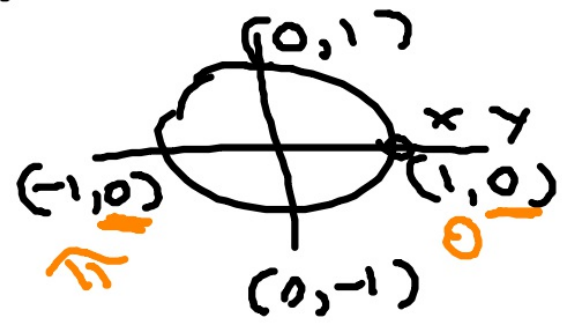
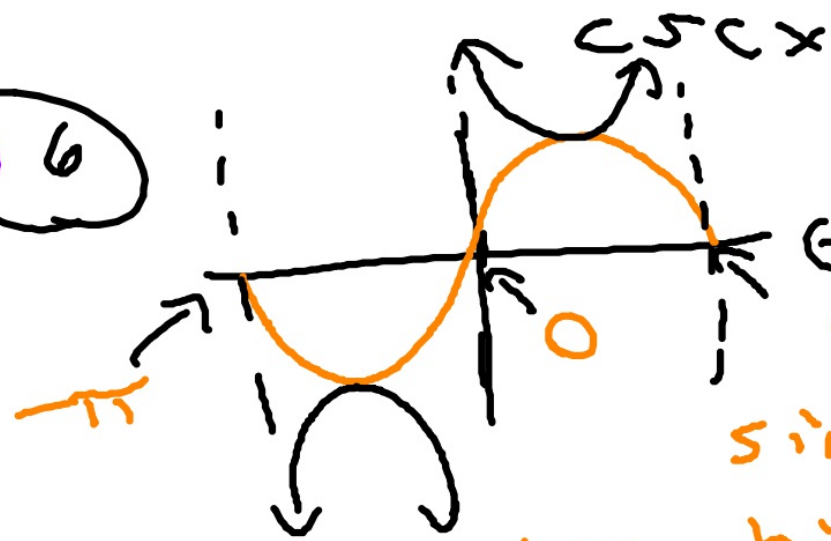
test
 $x = -4$

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

$\lim_{x \rightarrow -4} f(x)$
 D.N.E.

$\frac{1}{0}$
 asymptote

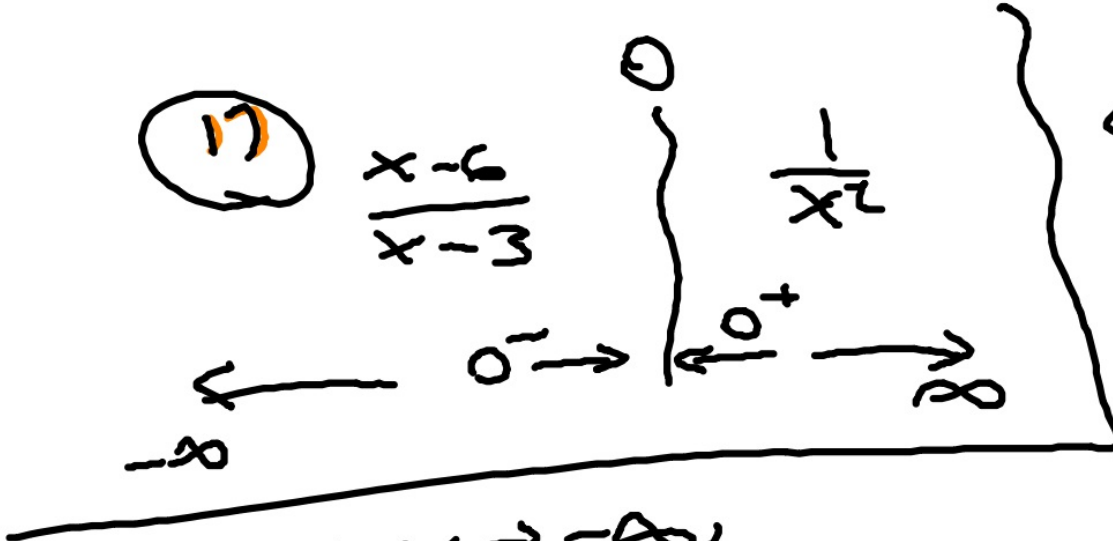
16



$|\sin x|$

$\sin x$

$k\pi$, k is an integer



a) $x \rightarrow -\infty$,
 $f(x) = \frac{x-6}{x-3} \rightarrow \frac{x}{x} = 1$

b) $x \rightarrow \infty$,
 $f(x) = \frac{1}{x^2} \rightarrow 0$

c) $x \rightarrow 0^-$
 $f(x) = \frac{x-6}{x-3} \rightarrow \frac{-6}{-3} = 2$

d) $x \rightarrow 0^+$
 $\left(\frac{1}{\infty}\right)^2 \rightarrow \infty$

18

$$x^2 - 2 \quad \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} \text{Sox}$$
$$3^2 - 2 = 5a(3)$$
$$9 - 2 = 15a$$
$$7 = 15a$$
$$a = \frac{7}{15}$$

19

$$x = 3 \dots$$
$$y = x^3 - 9x - 3$$
$$y = 3^3 - 9(3) - 3$$
$$y = -3$$
$$y' = 3x^2 - 9$$
$$y' = 3(3)^2 - 9 = 18 = m$$
$$y = mx + b$$
$$-3 = 18(3) + b$$
$$-3 = 54 + b$$
$$b = -57$$
$$y = 18x - 57$$

d/dx → f g product ...

30

$$\cos(xy) + x^3 = y^3$$

$$- \sin(xy) \left((1)(y) + (y')(x) \right) + 3x^2 = 3y^2 y'$$

for solve y'

$f'(g) \cdot g'$
chain rule ...