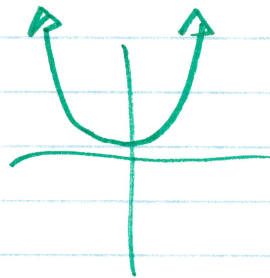
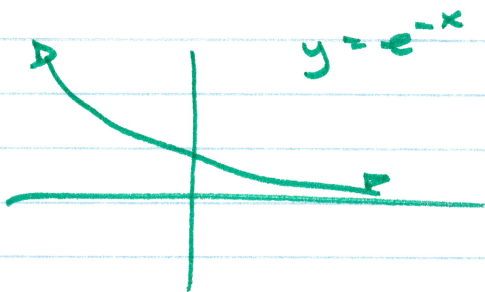
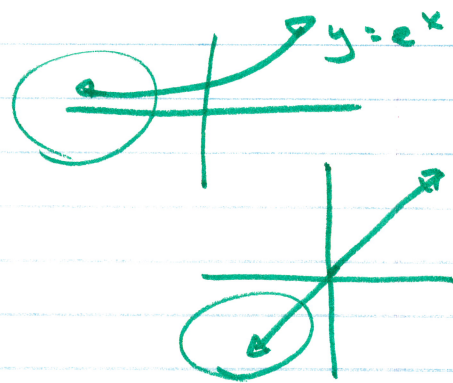


2.2
 (45) $y = e^x - 2x$
 AT $x = -\infty$
 $y = -2x$

AT $x = \infty$
 $y = e^x$



(49) $\lim_{x \rightarrow \infty} x e^x = \infty$

$\lim_{x \rightarrow -\infty} x e^x = 0$

(9) $\lim_{x \rightarrow \infty} \frac{1 - \cos x}{x^2} = 0$

(27) $f(x) = \frac{1}{x^2 - 4}$

$x^2 - 4 = 0$

$x = \pm 2$

$\lim_{x \rightarrow -2^-} \infty$

$\lim_{x \rightarrow 2^-} -\infty$

$\lim_{x \rightarrow -2^+} -\infty$

$\lim_{x \rightarrow 2^+} \infty$

(48) $y = x^2 + \sin x$

AT $x = \infty$

AT $x = -\infty$

$y = x^2$

$y = x^2$

2.2

(52)

$$f(x) = x \sin \frac{1}{x}$$

$$\lim_{x \rightarrow \infty} x \sin \frac{1}{x}$$

$$\lim_{x \rightarrow -\infty} x \sin \frac{1}{x}$$

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

$$\lim_{x \rightarrow \frac{1}{\infty}} \frac{1}{x} \sin \frac{1}{x}$$

$$\frac{1}{2} = \frac{1}{x}$$

$$2 = x$$

(53)

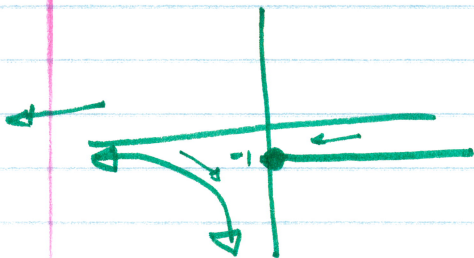
$$f(x) = \begin{cases} \frac{1}{x}, & x < 0 \\ -1, & x \geq 0 \end{cases}$$

$$\lim_{x \rightarrow -\infty} f(x) = 0$$

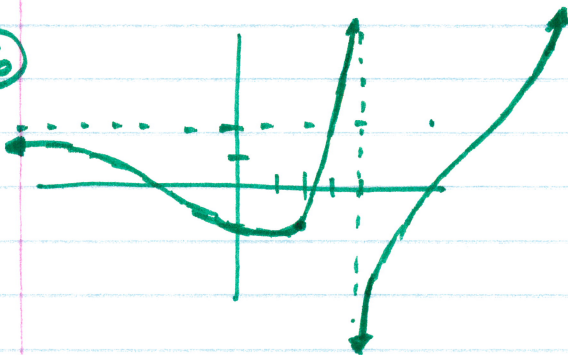
$$\lim_{x \rightarrow 0^-} f(x) = -\infty$$

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

$$\lim_{x \rightarrow 0^+} f(x) = -1$$



(56)



(69)

$$\lim_{x \rightarrow \infty} \frac{\ln x^2}{\ln x} = \lim_{x \rightarrow \infty} \frac{2 \ln x}{\ln x} = 2$$