

Math 1121

Homework #1

Section 3.1 #6, 10, 32, 36

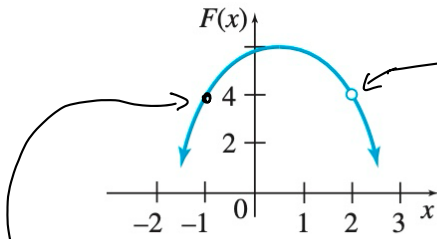
6.

6. (a) $\lim_{x \rightarrow 2} F(x)$

(b) $\lim_{x \rightarrow -1} F(x)$

a) $\lim_{x \rightarrow 2} F(x) = 4$

since the curve goes to $y=4$ here



b) $\lim_{x \rightarrow -1} F(x) = 4$

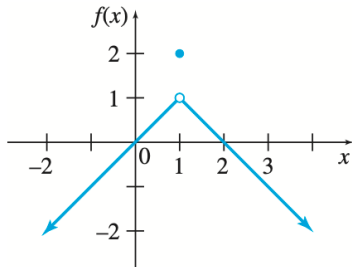
for the same reason,

here,

10.

10. (a) $a = 1$

(b) $a = 2$



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

ii) $\lim_{x \rightarrow 2^-} f(x) = 0$

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

iii) $\lim_{x \rightarrow 2^+} f(x) = 0$

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

iii) $\lim_{x \rightarrow 2} f(x) = 0$

iv) $f(1) = 2$

iv) $f(2) = 0$

32

$$\lim_{x \rightarrow -2} \frac{x^2 - 4}{x + 2} \rightarrow \frac{(-2)^2 - 4}{2 + (-2)} = \frac{4 - 4}{2 - 2} = \frac{0}{0}$$

$$= \lim_{x \rightarrow -2} \frac{\cancel{(x+2)}(x-2)}{\cancel{x+2}} = \lim_{x \rightarrow -2} x - 2 = -2 - 2 = \boxed{-4}$$

36

$$\lim_{x \rightarrow 5} \frac{x^2 - 3x - 10}{x - 5} \rightarrow \frac{5^2 - 3 \cdot 5 - 10}{5 - 5} = \frac{25 - 15 - 10}{0} = \frac{0}{0}$$

$$= \lim_{x \rightarrow 5} \frac{(x-5)(x+2)}{x-5} = \lim_{x \rightarrow 5} x+2 = 5+2 = \boxed{7}$$