

Overview of problems



Example Set: A

Graph the absolute value function

$$f(x) = -|x+6| + 3$$

Write the absolute value function as a compound function

$$f(x) = |x + 2|$$



Example Set: B

Graph the step function

$$f(x) = \begin{cases} 2, & -2 \leq x < 3 \\ 5, & 3 \leq x < 5 \\ 8, & 5 \leq x < 6 \\ 11 & 6 \leq x < 10 \end{cases}$$



Example Set: C

Evaluate the compound function

$$f(x) = \begin{cases} 3x^2 - x, & x \leq -2 \\ 6, & -2 < x \leq 1 \\ x^2 + 4x - 1, & x > 1 \end{cases}$$

$$f(4) =$$

$$f(-3) =$$

$$f(0) =$$

Graph the compound function

$$f(x) = \begin{cases} -x^2 + 2 & x \leq 4 \\ 2x & x > 4 \end{cases}$$

$$f(x) = \begin{cases} x^2 + 1 & -3 \leq x \leq 3 \\ 3x - 2 & x < -3 \text{ or } x > 3 \end{cases}$$



Example Set: D

Find the first four values of the recursive function

$$f(0) = 1$$

$$f(n) = f(n-1) + 4$$

$$f(0) = 4$$

$$f(1) = 2$$

$$f(n) = f(n-1) + f(n-2)$$

$$f(1) = 3$$

$$f(n) = [f(n-1)]^2 + n$$

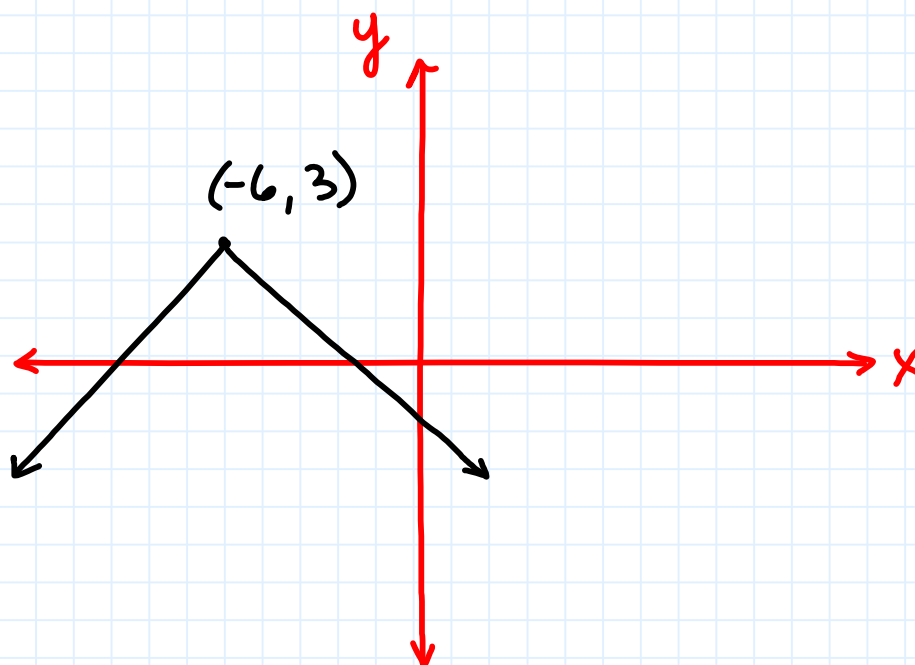
Overview of problems- KEY



Example Set: A

Graph the absolute value function

$$f(x) = -|x+6| + 3$$



Write the absolute value function as a compound function

$$f(x) = |x + 2|$$

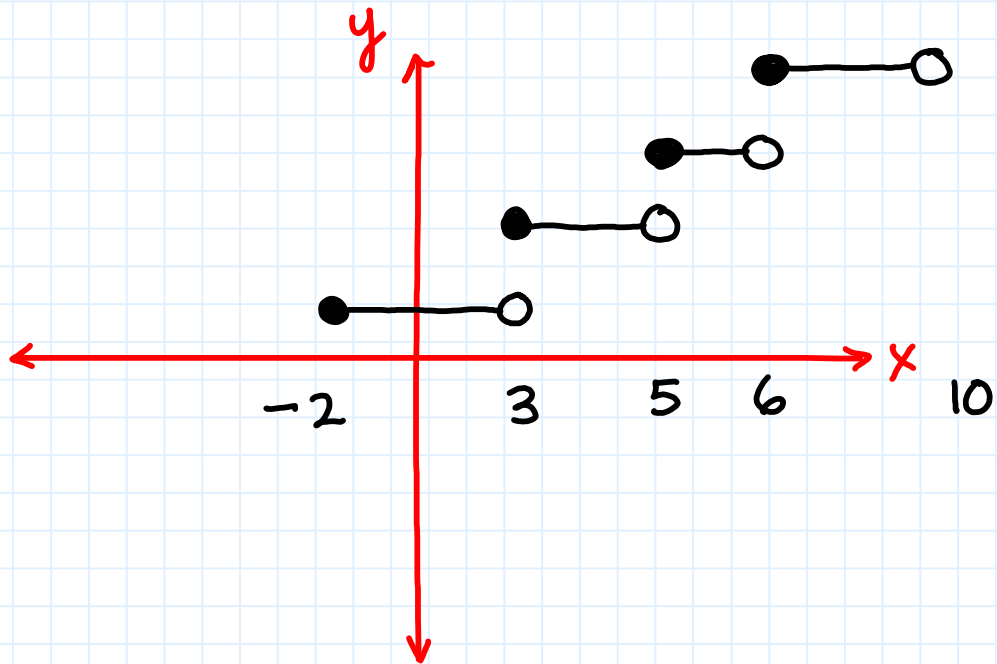
$$f(x) = \begin{cases} -(x+2) & x < -2 \\ (x+2) & x \geq -2 \end{cases}$$



Example Set: B

Graph the step function

$$f(x) = \begin{cases} 2, & -2 \leq x < 3 \\ 5, & 3 \leq x < 5 \\ 8, & 5 \leq x < 6 \\ 11 & 6 \leq x < 10 \end{cases}$$





Example Set: C

Evaluate the compound function

$$f(x) = \begin{cases} 3x^2 - x, & x \leq -2 \\ 6, & -2 < x \leq 1 \\ x^2 + 4x - 1, & x > 1 \end{cases}$$

$$f(4) =$$

31

$$f(-3) =$$

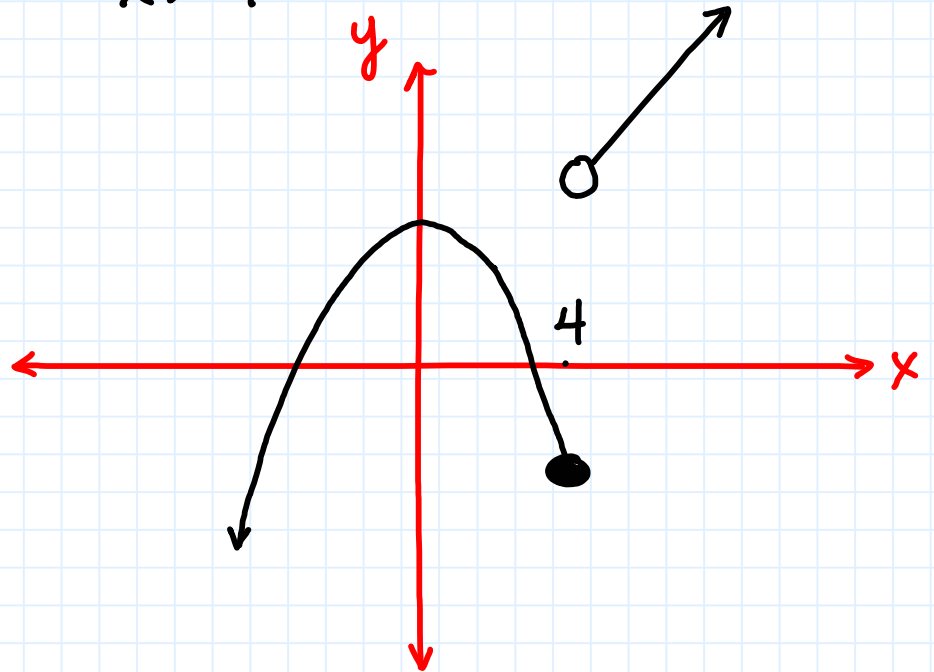
30

$$f(0) =$$

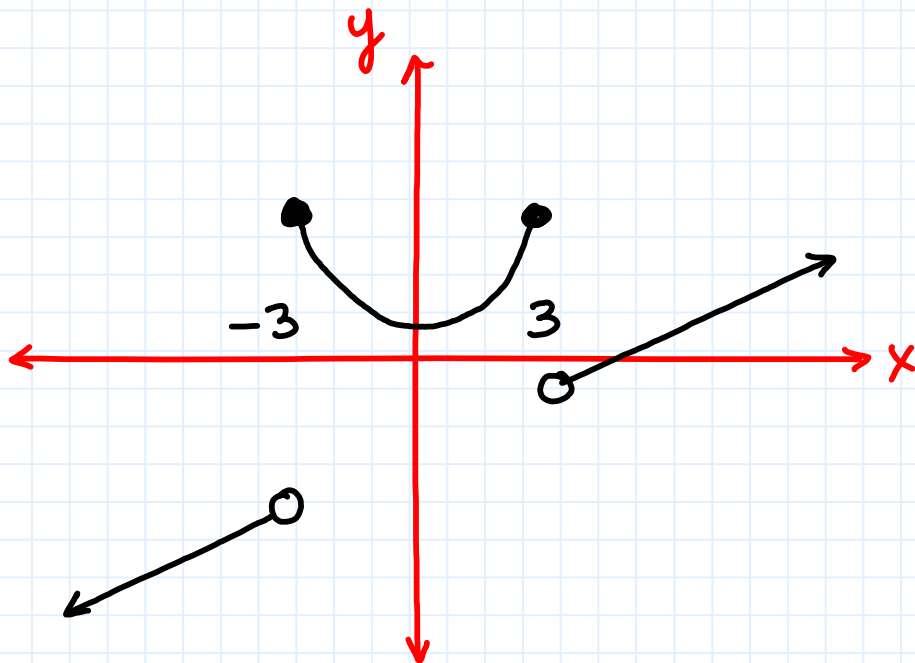
6

Graph the compound function

$$f(x) = \begin{cases} -x^2 + 2 & x \leq 4 \\ 2x & x > 4 \end{cases}$$



$$f(x) = \begin{cases} x^2 + 1 & -3 \leq x \leq 3 \\ 3x - 2 & x < -3 \text{ or } x > 3 \end{cases}$$





Example Set: D

Find the first four values of the recursive function

$$f(0) = 1$$

$$f(n) = f(n-1) + 4$$

$$f(0) = 1$$

$$f(1) = 5$$

$$f(2) = 9$$

$$f(3) = 13$$

$$f(0) = 4$$

$$f(1) = 2$$

$$f(n) = f(n-1) + f(n-2)$$

$$f(0) = 4$$

$$f(1) = 2$$

$$f(2) = 6$$

$$f(3) = 8$$

$$f(1) = 3$$

$$f(n) = [f(n-1)]^2 + n$$

$$f(1) = 3$$

$$f(2) = 11$$

$$f(3) = 124$$

$$f(4) = 15380$$