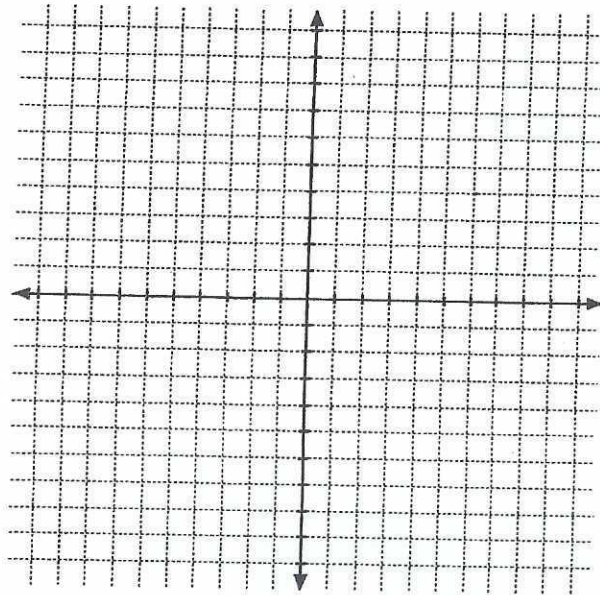


Homework

- 1) (a) On a set of coordinate axes, graph the function $y = |x| + 1$ from $-5 \leq x \leq 5$.
- (b) On the same set of coordinate axes, graph the function $y = 2|x| + 1$ from $-4 \leq x \leq 4$.
- (c) Describe how the changes in the coefficient affect the graphs.

(a) Table of values



(b) Table of values

- 2) What will be the equation of the resulting graph if the graph of $y = |x|$ is shifted 3 units up?

A) $y = |x| + 3$ C) $y = |x + 3|$
B) $y = |x - 3|$ D) $y = |x| - 3$

- 4) When compared to the graph of $y = |x|$, the graph of $y = |x + 5|$ is

A) shifted to the left 5 units
B) shifted down 5 units
C) shifted up 5 units
D) shifted to the right 5 units

- 3) What will be the equation of the resulting graph if the graph of $y = |x|$ is shifted 4 units to the right?

A) $y = |x| - 4$ C) $y = |x| + 4$
B) $y = |x + 4|$ D) $y = |x - 4|$

- 5) Write an equation for the function $y = |x|$ after a shift 7 units to the right.

* Turn Over

6) In a-e, write an equation for the resulting function if the graph of $y = |x|$ is:

a. shifted 2.5 units down

b. shifted 6 units to the right

c. stretched vertically by a factor of 3 and shifted 5 units up

d. compressed vertically by a factor of $\frac{1}{3}$ and reflected in the x -axis

e. reflected in the x -axis, shifted 1 unit up, and shifted 1 unit to the left

(a)

(b)

(c)

(d)

(e)

7) In a-d, describe the translation, reflection, and/or scaling that must be applied to $y = |x|$ to obtain the graph of each given function.

a. $y = -|x| - 4$

b. $y = -2|x| + 2$

c. $y = |x + 2| - 3$

d. $y = -|x - 1.5| + 4$