

Section 7.2 Extra Practice

1. Given the table of values for $y = f(x)$, create a table of values for $y = |f(x)|$.

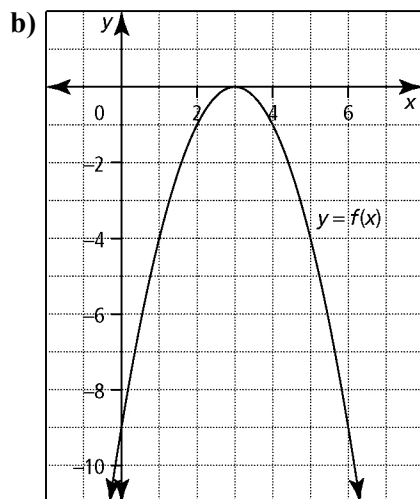
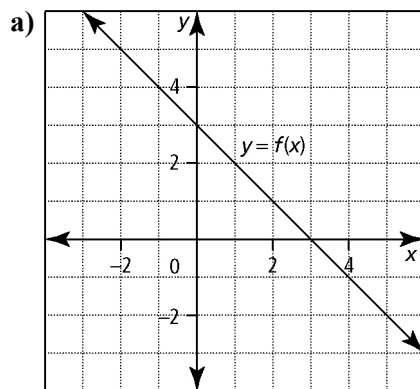
a)

x	y
0	1
2	0
4	-1
6	-2
8	-3

b)

x	y
-4	-8
-2	0
0	0
2	-8
4	-24

2. Use the graph of $y = f(x)$ to sketch the graph of $y = |f(x)|$.



3. Sketch the graph of each function. State the intercepts, and the domain and range.

a) $f(x) = |2x + 1|$

b) $g(x) = |-x - 4|$

4. Sketch the graph of each function. State the intercepts, and domain and range.

a) $y = |-x^2 - 6x - 5|$

b) $f(x) = |(2x + 1)(x - 3)|$

5. Express each function as a piecewise function.

a) $y = |5x + 1|$

b) $y = \left| \frac{-1}{2}x + 4 \right|$

c) $y = |2(x + 2)^2 - 8|$

d) $y = |-2(x + 3)(x - 1)|$

6. Consider the following functions:

• $f(x) = x + 5$

• $g(x) = |f(x)|$

• $h(x) = (x + 5)^2$

• $k(x) = |h(x)|$

- a) Which functions are identical?

- b) Which functions have the same domain?

- c) Which functions have the same range?

- d) Which functions have the same x -intercept(s)?

7. For each pair of functions, determine the invariant point(s).

a) $y = 3x - 9$ and $y = |3x - 9|$

b) $y = -x^2$ and $y = |-x^2|$

c) $y = -x^2 - 4x$ and $y = |-x^2 - 4x|$

d) $y = (x + 1)^2 + 2$ and $y = |(x + 1)^2 + 2|$

