Homework 05

For problems 1-5, simplify the expression by writing it without absolute value symbols.

1. $|-11|$
2. $|3|$
3. $|0|$
4. $|-x|$, if $x \geq 0$.
5. $|x|$, if $x < 0$. (Hint: Ask yourself, is $-x$ a positive number or a negative number?)

For problems 6-10, find all solutions to the equation involving absolute values.

6. $|x + 2| = 5$
7. $|2x - 5| = 3$
8. $|3x + 6| = 12$
9. $|3x - 11| = -4$
10. $|3x + 2| = |x - 5|$

Homework 6

1. Consider the equation $y + x^2 = 5$. Determine whether the following ordered pairs $(x, y)$ are solutions for this equation.
   
a. $(2, 1)$.
b. $(1, 1)$.
c. $(2, -1)$.
d. $(-2, 1)$.
e. $(-1, 4)$.

Homework 6

3. Carefully plot points corresponding to $x$-values of $x = 0, 0.2, 0.4, 0.6, 0.8, 1.0$ for the equation $y = x^3$, and draw the graph.

4. On the same graph as Problem 3, carefully plot points corresponding to $x$-values of $x = 0, 0.2, 0.4, 0.6, 0.8, 1.0$ for the equation $y = x^2$, and draw the graph.
**Homework 07a**

1. Let \( f(x) = -x + 1 \). Find
   a. \( f(0) \)
   b. \( f(-3) \)
   c. \( f(2) \)

2. Let \( f(x) = x^2 - x \). Find
   a. \( f(3) \)
   b. \( f(0) \)
   c. \( f(-1) \)

**Homework 07b**

For Problems 1-5, find the \( x \)- and \( y \)-intercepts, and graph.

1. \( 2x + 3y = 12 \).
2. \( 3x - 4y = 12 \).
3. \( 2x - 5y = -10 \).
4. \( x + 2y = 4 \).
5. \( -3x + 2y = 6 \).

**Homework 07c**

For Problems 1-5, find the slope of the line through the given points.

1. \( (3, 4) \) and \( (2, 7) \).
2. \( (-1, 4) \) and \( (5, 2) \).
3. \( (8, 1) \) and \( (1, 7) \).
4. \( (-2, -3) \) and \( (-1, -7) \).
5. \( (3, 0) \) and \( (-4, 3) \).

For Problems 6-10, graph the linear function.

6. \( f(x) = 2x - 3 \).
7. \( f(x) = -2x - 3 \).
8. \( f(x) = \frac{2}{5}x + 1 \).
9. \( f(x) = -\frac{1}{3}x - 4 \).
10. \( f(x) = \frac{4}{3}x - 2 \).
For each of the following, graph the linear equation in two variables.

1. \( y = 3x - 2. \)
2. \( -6x + 8y = 24. \)
3. \( 2x + 4y = 12. \)
4. \( y = x + 4. \)
5. \( y = 3x. \)
6. \( y = -2. \)
7. \( x = 3. \)
8. \( y = x. \)
9. \( y = -\frac{1}{2}x. \)
10. \( y = -x + 3. \) (Hint: \( m = -1. \))
Answers:

HW05 Answers: 1) 11. 2) 3. 3) 0. 4) $x$. 5) $-x$.
6) $x = 3, -7$. 7) $x = 4, 1$. 8) $x = 2, -6$. 9) No solutions. 10) $x = -\frac{7}{3}, \frac{3}{7}$.

HW06 Answers:
1) a) Yes. b) No. c) No. d) Yes. e) Yes. HW 11 Answers:
3) I can’t get this exactly right on the computer, but the graph for $y = x^3$ (the red one) should be the lower one. The approximate graph for $y = x^2$ is in blue.

HW07a Answers: 1a) $f(0) = 1$. b) $f(-3) = 4$. c) $f(2) = -1$.
2a) $f(3) = 6$. b) $f(0) = 0$. c) $f(-1) = 2$.

HW07b Answers:
1) $x = 6$ and $y = 4$. 2) $x = 4$ and $y = -3$. 3) $x = -5$ and $y = 2$.
4) $x = 4$ and $y = 2$.

5) $x = -2$ and $y = 3$.

HW 07c Answers: 1) $m = \frac{3}{1} = -3$. 2) $m = \frac{-2}{6} = -\frac{1}{3}$. 3) $m = \frac{6}{7} = -\frac{6}{7}$. 4) $m = \frac{-4}{1} = -4$. 5) $m = \frac{3}{7} = -\frac{3}{7}$.

HW07d Answers: 1) 2) 3)