

Lesson 8.6 • Defining the Absolute Value Function

Name _____ Period _____ Date _____

1. Find the value of each expression without using a calculator. Check your results with your calculator.

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|------------------------|-----------------|--------------------------------|
| a. $ 12 $ | b. $ -9 $ | c. $\left -\frac{4}{3}\right $ |
| d. $- 7 $ | e. $ -7 $ | f. $ -11 + 6 $ |
| g. $ -11 + 6 $ | h. $ -4 - 3 $ | i. $ -7 \cdot 5 $ |
| j. $\frac{ -18 }{ 6 }$ | k. $-3 4 - 9 $ | l. $ -3 ^{-2}$ |
| m. $4 -5 ^{-1}$ | n. $5 -3 ^2$ | o. $-3 (-4)(5) $ |

2. Find the x -values that satisfy each equation.

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|-------------------|-------------------|------------------|
| a. $ x = 6$ | b. $ x = 3.14$ | c. $ x = -4.5$ |
| d. $ x + 3 = 11$ | e. $ x + 3 = 11$ | f. $ x - 3 = 5$ |

3. Evaluate both sides of each statement to determine whether to replace the box with =, <, or >. Use your calculator to check your answers.

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|--------------------------------------|---|
| a. $ 12 - 7 \square 7 - 12 $ | b. $\frac{ 30 }{ -5 } \square \left \frac{30}{-5}\right $ |
| c. $- -6 \square -(-6)$ | d. $5^{-2} \square 5^{-2} $ |
| e. $(-3)^4 \square -3 ^4$ | f. $(-5)^3 \square -5 ^3$ |
| g. $ 14 - (-6) \square 14 - -6 $ | h. $ 21 - 13 \square 21 - 13 $ |
| i. $3 12 + 7 \square 3 12 + 3 7 $ | |

4. Find each value if $f(x) = 2 - 3x$ and $g(x) = |2 - 3x|$.

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|------------|------------|------------|------------|
| a. $f(-4)$ | b. $f(-1)$ | c. $f(1)$ | d. $f(2)$ |
| e. $f(5)$ | f. $f(8)$ | g. $g(-4)$ | h. $g(-1)$ |
| i. $g(1)$ | j. $g(2)$ | k. $g(5)$ | l. $g(8)$ |