Lesson 6.1: Absolute Value and Absolute Value Functions

Explore Your Understanding Assignment

This assignment includes multiple choice and short answer questions. For multiple choice questions, select the best answer. Each is worth 1 mark. Marks assigned to short answer questions are indicated for each question. Be sure to show all necessary work.

(1) _____ 1. The list with values in order from least to greatest is

A. $-3\left|\frac{7}{2}\right|,\ -7,\ \left|-2\frac{2}{5}\right|,\ \left|\frac{7}{2}\right|,\ 3.6,\ |-4.4|,\ 9.9$

B. $-3\left|\frac{7}{2}\right|,\ -7,\ |-4.4|,\ \left|-2\frac{2}{5}\right|,\ \left|\frac{7}{2}\right|,\ 3.6,\ 9.9$

C. $|-6.2|,\ -4.1,\ \left|-2\frac{5}{4}\right|,\ -2\left|\frac{1}{3}\right|,\ |3.1|,\ \frac{9}{2},\ 5$

D. $-4.1,\ \left|-2\frac{5}{4}\right|,\ -2\left|\frac{1}{3}\right|,\ |3.1|,\ \frac{9}{2},\ 5,\ |-6.2|$

(1) _____ 2. The winning margin between the top two candidates in an election can be represented by

A. $|A+B|$

B. $|A-B|$

C. $|A|+|B|$

D. $|A|-|B|$

(1) _____ 3. The point (–3, –4) lies on the graph of $y=f(x)$. The corresponding point that must lie on the graph of $y=|f(x)|$ is

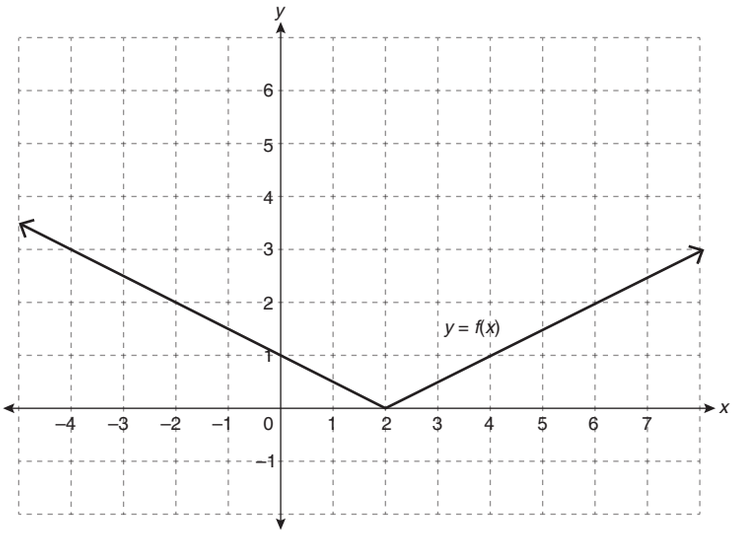
A. (3, 4)

B. (3, –4)

C. (–3, 4)

D. (–3, –4)

Use the following information to answer question 4.



(1) _____ 4. The function(s) represented by the graph is/are

A. $y = \left|\frac{1}{2}x - 1\right|$ only

B. $y = \left|-\frac{1}{2}x + 1\right|$ only

C. both $y = \left|\frac{1}{2}x - 1\right|$ and $y = \left|-\frac{1}{2}x + 1\right|$

D. neither $y = \left|\frac{1}{2}x - 1\right|$ nor $y = \left|-\frac{1}{2}x + 1\right|$

(1) 5. Using an example, explain how absolute value can be used to represent the distance between two values on a number line.

6. A hot air balloon pilot raises a balloon 200 m from the ground, turns off the burner, and allows the balloon to descend 60 m before turning the burner on again to raise it another 170 m.

(1) a. Use positive and negative values to represent each stage of the balloon's flight path.

(1) b. Use absolute values to determine the total vertical distance travelled by the balloon.

7. During a volleyball game, Christine dove to save a ball. The function $h(t) = -4.9t^2 + 8.5t$ approximates the height of the ball above the ground in metres, t seconds after it is hit.

(1) a. If the net is 2.23 m tall, the function $d(t) = |-4.9t^2 + 8.5t - 2.23|$ represents the distance between the bottom of the ball and the top of the net after t seconds. Explain this function.

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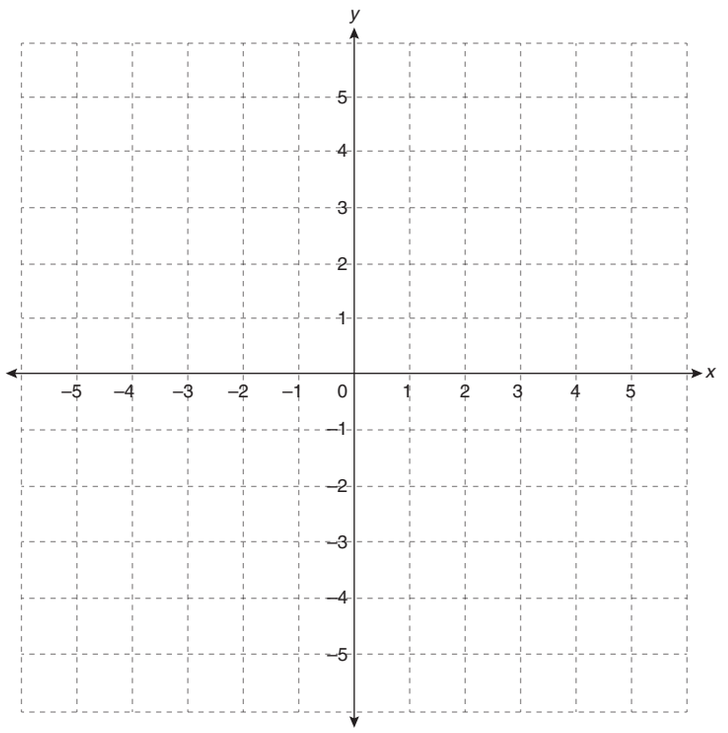
(1) b. Graph the absolute value function using technology.



(2) c. State the domain and range of the absolute value function.

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