Unit 6: Absolute Value and Reciprocal Function Final Review Assignment

Final Review 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 absolute values of $|4|$ and $|-5|$ are respectively

A. 4 and 5
B. 4 and –5
C. –4 and 5
D. –4 and –5

(1) _____ 2. If $|p|+p \neq 0$, then

A. $p < 0$
B. $p \leq 0$
C. $p > 0$
D. $p \geq 0$

(1) _____ 3. The set ordered from least to greatest is

A. $-\left|\frac{7}{2}\right|, \left|-3\frac{1}{4}\right|, -3, \frac{16}{5}, |3.4|$

B. $-\left|\frac{7}{2}\right|, -3, \frac{16}{5}, \left|-3\frac{1}{4}\right|, |3.4|$

C. $-3, \frac{16}{5}, \left|-3\frac{1}{4}\right|, |3.4|, -\left|\frac{7}{2}\right|$

D. $|3.4|, -3, \frac{16}{5}, \left|-3\frac{1}{4}\right|, -\left|\frac{7}{2}\right|$

(1)_____ 4. An **incorrect** definition of absolute value is

A. $|x| = \begin{cases} x \text{ for } x > 0 \\ 0 \text{ for } x = 0 \\ -x \text{ for } x < 0 \end{cases}$

B. $|x| = \begin{cases} x \text{ for } x \geq 0 \\ -x \text{ for } x < 0 \end{cases}$

C. $|x| = \begin{cases} x \text{ for } x > 0 \\ -x \text{ for } x \leq 0 \end{cases}$

D. $|x| = \begin{cases} x \text{ for } x > 0 \\ -x \text{ for } x < 0 \end{cases}$

(1)_____ 5. If the graph of $y = f(x), x \in \mathrm{R}$ is the same as $y = |f(x)|, x \in \mathrm{R}$, then

A. $f(x)$ may be of the form $ax + b, a \neq 0$ or of the form $ax^2 + bx + c, a \neq 0$

B. $f(x)$ may be of the form $ax + b, a \neq 0$ but cannot be of the form $ax^2 + bx + c, a \neq 0$

C. $f(x)$ may be of the form $ax^2 + bx + c, a \neq 0$, but cannot be of the form $ax + b, a \neq 0$

D. $f(x)$ cannot be of the form $ax + b, a \neq 0$ or $ax^2 + bx + c, a \neq 0$

(1)_____ 6. The equation $|x^2 - px + 5| = 7$ has real solutions

A. only when $p^2 \geq 48$
B. only when $p^2 < 48$
C. for any p-value
D. for no values of p

(1)_____ 7. If r and s are numbers on a number line, the **best** representation of how much farther one value is from zero than the other value is

A. $|r + s|$
B. $|r - s|$
C. $|r| + |s|$
D. $|r| - |s|$

Use the following information to answer question 8.

A partial solution to the equation $|ax + b| = cx + d$ is shown.

Line 1	$\lvert ax + b \rvert = cx + d$
Line 2	$-ax - b = cx + d$
Line 3	$(-a - c)x = d + b$
Line 4	$x = \frac{d + b}{-a - c}$ for $x \geq -\frac{b}{a}$

(1)_____ 8. The first error is recorded in line

A. 1
B. 2
C. 3
D. 4

(1) _____ 9. If the range of $y = \frac{1}{f(x)}$ is $\left\{y \mid y \leq -\frac{1}{4} \text{ or } y > 0, y \in \mathrm{R}\right\}$, then the range of $y = f(x)$ **may** be

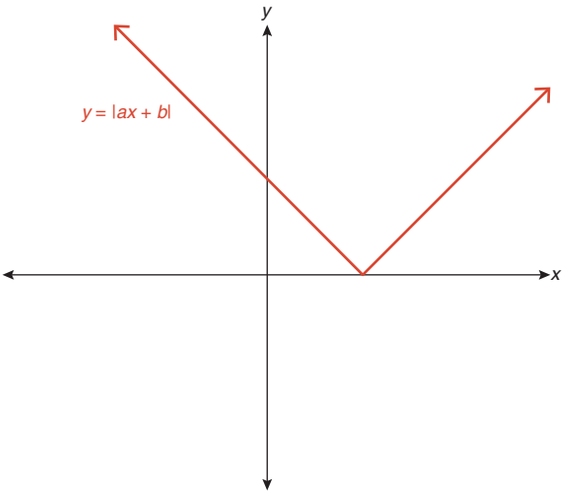
A. $\{y \mid y \leq -4, y \in \mathrm{R}\}$

B. $\{y \mid y \geq -4, y \in \mathrm{R}\}$

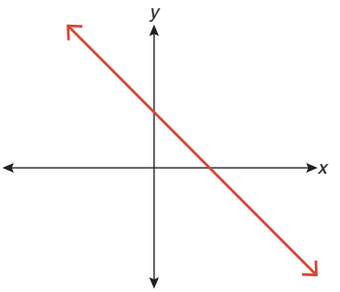
C. $\left\{y \mid y \geq -\frac{1}{4}, y \in \mathrm{R}\right\}$

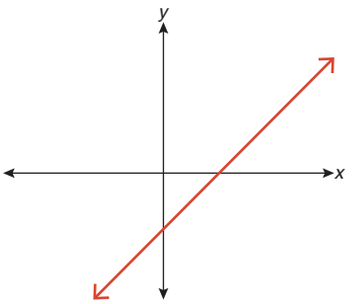
D. $\left\{y \mid -4 \leq y \leq -\frac{1}{4}, y \in \mathrm{R}\right\}$

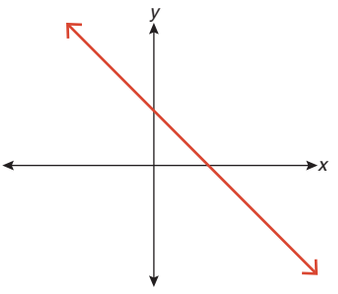
Use the following information to answer question 10.

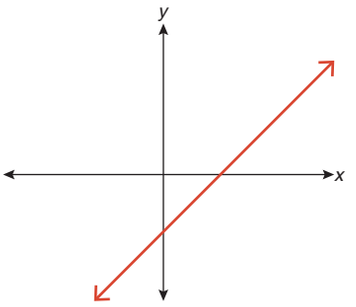


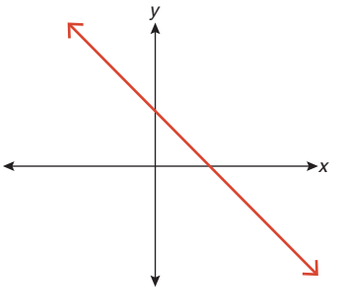
(1) _____ 10. The graph of $y = ax + b$ may be

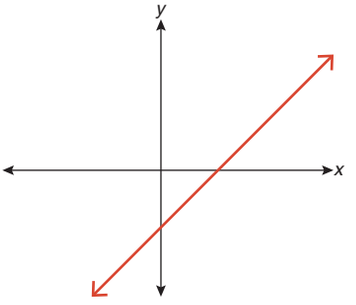
A. only 

B. only 

C. either 

or 

D. neither 

nor 

(3) 11. Solve $|x^2 - 6x + 5| = 2x - 2$.

(1) 12. Will $\sqrt{x^2}$ and $|x|$ always have the same value? Explain.

(2) 13. Use the graph of $y = x^2 - 4$ to sketch the graph of $y = \frac{1}{x^2 - 4}$. Be sure to explain all steps.

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