

EXTRA PRACTICE — Exercises

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Unit II – First Degree Relations with One Placeholder

Part D – Systems of Equations and Inequalities

Lesson 3 – Absolute Value Equal to a Positive Number (or)

Find the solution set for each of the following absolute value relations and show the solution set on a number line and in set notation.

1. $-4|4y + 5| = -68$

2. $|2.5x - 8| = 10$

3. $13 + |4 - 7x| = 5$

4. $2|x + (x + 2)| = 23$

5. $2|2x - 7| + 11 = 25$

6. $\left| \frac{4 - 5x}{2} \right| = 7$

7. $|7x - 2| = x + 4$

8*. $|5p + 7| = |4p + 3|$

9*. $\left| \frac{6 - 8x}{5} \right| = \left| \frac{7 + 3x}{2} \right|$

* Note: Sometimes equations have two absolute value expressions. For example, if $|a| = |b|$, then a and b are the same distance from zero. And, if a and b are the same distance from zero, then they are either the same number or they are opposites of each other. (i.e., $a = b$ or $a = -b$)

EXTRA PRACTICE — Answer Key

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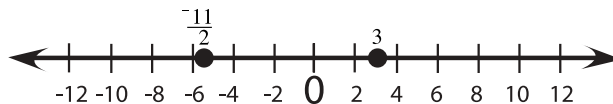
Unit II – First Degree Relations with One Placeholder

Part D – Systems of Equations and Inequalities

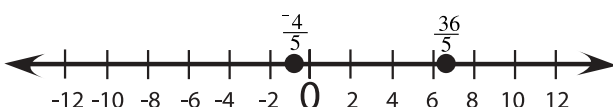
Lesson 3 – Absolute Value Equal to a Positive Number (or)

Find the solution set for each of the following absolute value relations and show the solution set on a number line and in set notation.

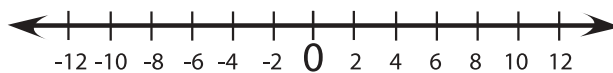
1. $S = \left\{ -\frac{11}{2}, 3 \right\}$



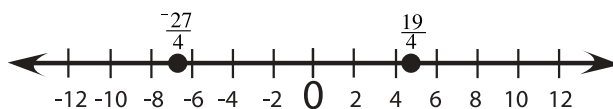
2. $S = \left\{ -\frac{4}{5}, \frac{36}{5} \right\}$



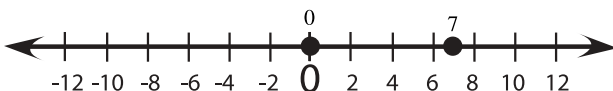
3. $S = \{ \quad \}$ (absolute values are never negative)



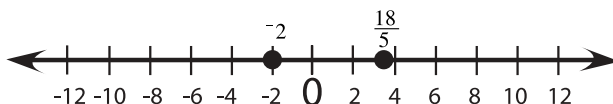
4. $S = \left\{ -\frac{27}{4}, \frac{19}{4} \right\}$



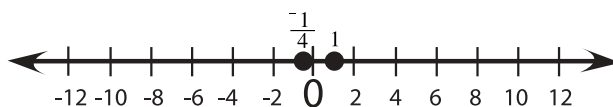
5. $S = \{7, 0\}$



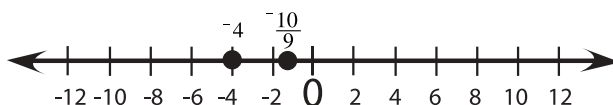
6. $S = \left\{ -2, \frac{18}{5} \right\}$



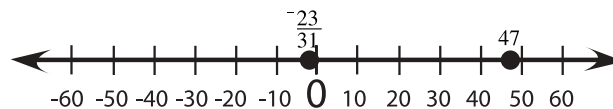
7. $S = \left\{ 1, \frac{1}{4} \right\}$



8*. $S = \left\{ -4, -\frac{10}{9} \right\}$



9*. $S = \left\{ -\frac{23}{31}, 47 \right\}$



* Note: Sometimes equations have two absolute value expressions. For example, if $|a| = |b|$, then a and b are the same distance from zero. And, if a and b are the same distance from zero, then they are either the same number or they are opposites of each other. (i.e., $a = b$ or $a = -b$)