Name

Alg I

5.5 Solve Absolute Value Equations

I can solve absolute value equations.

Ch. 5 Quiz

Absolute Value Equation: An equation that contains an absolute value expression.

Example 1:

1) a) $|x| = 3$

$x = 3$ or $x = -3$

b) $|x| = 15$

$x = 15$ or $x = -15$

Example 2:

3) $|r - 7| = 9$

$r - 7 = 9$ or $r - 7 = -9$

$+7 \quad +7 \qquad +7 \quad +7$

$r = 16$ or $r = -2$

Example 3:

4) $2|s| + 4.1 = 18.9$

$-4.1 \quad -4.1$

$\frac{2|s|}{2} = \frac{14.8}{2}$

$|s| = 7.4$

$s = 7.4$ or $s = -7.4$

5) $4|t + 9| - 5 = 19$

$+5 \quad +5$

$\frac{4|t + 9|}{4} = \frac{24}{4}$

$|t + 9| = 6$

$t + 9 = 6$ or $t + 9 = -6$

$-9 \quad -9 \qquad -9 \quad -9$

$t = -3$ or $t = -15$

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Ch. 5 Quiz

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Example 4:

5) $2|m-5|+4=2$

$-4 \quad -4$

$2|m-5| = -2$

No Solutions

6) $-3|n+2|+7=-10$

$+7 \quad +7$

$\frac{-3|n+2|}{-3} = \frac{-3}{-3}$

$n+2=1$ or $n+2=-1$

$-2 \quad -2 \qquad -2 \quad -2$

$n=-1$ or $n=-3$

Absolute Deviation: The absolute value of the difference of X and the given value

absolute deviation $= |x - \text{given value}|$

Example 5:

7) $5.2 = |x-7.6|$

$5.2 = x-7.6$ or $-5.2 = x-7.6$

$+7.6 \quad +7.6 \qquad +7.6 \quad +7.6$

$12.8 = x$ or $2.4 = x$