

Algebra Equations Quiz Review

Solve each of the following equations.

If the answer is not an integer, leave the answer as a reduced improper fraction.

1. $-8x = 40$
 $\frac{-8x}{-8} = \frac{40}{-8}$

$x = -5$

2. $5x - 15 = -45$
 $+15 \quad +15$

$\frac{5x}{5} = \frac{-30}{5}$ $x = -6$

3. $-\frac{2}{5}x + 4 = -12$
 $-4 \quad -4$

$-\frac{5}{2} \cdot -\frac{2}{5}x = -16 \cdot -\frac{5}{2}$

$x = \frac{40}{2}$
 $x = 20$

4. $-12 = 9x + 12 - 12x$

$-12 = -3x + 12$
 $-12 \quad -12$

$-24 = -3x$

$x = 8$

5. $-4(5x + 10) = -60$

$-20x - 40 = -60$
 $+40 \quad +40$

$-20x = -20$

$x = 1$

6. $6x - 6 = 351 - x$
 $+x \quad +x$

$7x - 6 = 351$
 $+6 \quad +6$

$\frac{7x}{7} = \frac{357}{7}$ $x = 51$

7. $12x - 4 - 9x = 3(x + 1) - 7$

$3x - 4 = 3x + 3 - 7$

$3x - 4 = 3x - 4$
 $-3x \quad -3x$

$-4 = -4$

All Real #'s

8. $2(2x + 3) = 4(x - 8)$

$4x + 6 = 4x - 32$
 $-4x \quad -4x$

$6 = -32$

NO solution

9. $-6(2 - 6x) = 10x + 20x$

$-12 + 36x = 30x$
 $-36x \quad -36x$

$-12 = -6x$

$x = 2$

10. $\frac{3}{4}(8x + 24) = 2(-x - 3)$

$\frac{24}{4}x + \frac{72}{4} = -2x - 6$

$6x + 18 = -2x - 6$
 $+2x \quad +2x$

$8x + 18 = -6$
 $-18 \quad -18$

$8x = -24$

$x = -3$

11. Give an example of each property:

a. Transitive Property: $a=b, b=c$ then $a=c$

b. Identity of Addition: $a+0=a$

c. Inverse of Multiplication: $\frac{a}{b} \cdot \frac{b}{a} = 1$

12. Identify the property used in each step below:

$$16 = -4x - 8$$

$$+8 \quad +8$$

Addition Property of Equality

$$24 = -4x$$

$$\div -4 \quad \div -4$$

division Property of Equality

$$-6 = x$$

$$x = -6$$

Symmetric Property

13. An apple tree starts the day with 115 apples. Each day 13 apples fall off the tree. How many days have passed when there are 37 apples left on the tree.

Equation: $115 - 13x = 37$

Solution: 6 days

14. The sum of three consecutive integers is 75. What are the three integers?

Equation: $x + (x+1) + (x+2) = 75$

Solution: 24, 25, 26

$$3x + 3 = 75$$

$$x = 24$$

$$24 + 1$$

$$24 + 2$$

$$24 + 25 + 26$$