

Solving Equations 7
Geometry

(KEY)

Evaluate the following expressions.

$$\begin{aligned}
 1) \quad & 48 \div (5x - 6)^2 \cdot y - 12; \quad x = 2, y = 14 \\
 & 48 \div (5(2) - 6)^2 \cdot (14) - 12 \\
 & 48 \div (10 - 6)^2 \cdot (14) - 12 \\
 & 48 \div (4)^2 \cdot 14 - 12 \\
 & 48 \div 16 \cdot 14 - 12 \\
 & 3 \cdot 14 - 12 \\
 & 42 - 12 \\
 & \boxed{= 30}
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & p^2 \div (2 + q)^2 + r^3 - 10; \quad p = 12, q = 4, r = 3 \\
 & (12)^2 \div (2 + (4))^2 + (3)^3 - 10 \\
 & 144 \div (6)^2 + 27 - 19 \\
 & 144 \div 36 + 27 - 19 \\
 & 4 + 27 - 10 \\
 & \boxed{= 21}
 \end{aligned}$$

Solve, check, and graph the following equations.

$$\begin{aligned}
 3) \quad & \frac{p}{7} - 11 = -3 \\
 & \quad \quad \quad +11 \quad +11 \\
 & 7\left(\frac{p}{7}\right) = (8)7 \\
 & \boxed{p = 56}
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & -6g^2 + 13 = 163 \\
 & \quad \quad \quad -13 \quad -13 \\
 & \underline{-6g^2 = 150} \\
 & \quad \quad \quad -6 \quad -6 \\
 & g^2 = -25
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 70 = 7x + 3x \\
 & \underline{70 = 10x} \\
 & \quad \quad \quad 10 \quad 10 \\
 & \boxed{7 = x}
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & -63 = 2x + 5x \\
 & \quad \quad \quad \underline{-63 = 7x} \\
 & \quad \quad \quad \quad \quad \quad 7 \quad 7 \\
 & \boxed{-9 = x}
 \end{aligned}$$

$$\begin{aligned}
 \checkmark \quad & \frac{56}{7} - 11 = -3 \\
 & 8 - 11 = -3 \\
 & -3 = -3 \checkmark
 \end{aligned}$$

$\sqrt{g^2} = \sqrt{-25}$
 No Real Solution

$$\begin{aligned}
 \checkmark \quad & 70 = 7(7) + 3(7) \\
 & 70 = 49 + 21 \\
 & 70 = 70 \checkmark
 \end{aligned}$$

$$\begin{aligned}
 \checkmark \quad & -63 = 2(-9) + 5(-9) \\
 & -63 = -18 + (-45) \\
 & -63 = -63 \checkmark
 \end{aligned}$$



$$\begin{aligned}
 7) \quad & 33 = 9x - 6x \\
 & \underline{\frac{33}{3} = \frac{3x}{3}} \\
 & \boxed{11 = x}
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & 50 = x + 12x - 15 \\
 & 50 = 13x - 15 \\
 & \quad \quad \quad +15 \quad +15 \\
 & \underline{65 = 13x} \\
 & \quad \quad \quad 13 \quad 13
 \end{aligned}$$

$$\begin{aligned}
 \checkmark \quad & 33 = 9(11) - 6(11) \\
 & 33 = 99 - 66 \\
 & 33 = 33 \checkmark
 \end{aligned}$$

$$\boxed{5 = x}$$

$$\begin{aligned}
 \checkmark \quad & 50 = (5) + 12(5) - 15 \\
 & 50 = 5 + 60 - 15 \\
 & 50 = 50 \checkmark
 \end{aligned}$$



$$\begin{aligned} 9) \quad -32 &= 5x + 4x + 13 \\ -32 &= 9x + 13 \\ \underline{-13} \quad \underline{-13} \\ -45 &= 9x \\ \underline{9} \quad \underline{9} \end{aligned}$$

$$-5 = x$$

CHECK AND GRAPH

$$\begin{aligned} 10) \quad 27 &= -21 + 16x - 8x \\ 27 &= -21 + 8x \\ \underline{+21} \quad \underline{+21} \\ 48 &= 8x \\ \underline{8} \quad \underline{8} \end{aligned}$$

$$6 = x$$

CHECK AND GRAPH