Solving Equations 10 (KEY)
Geometry

Solve, check, and graph the following equations. Use the back of the worksheet for the last problems.

1) $17 - \frac{t}{5} = 23$

-17 -17

$(-5)\left(-\frac{t}{5}\right) = 6(-5)$

t = -30

✓ $17 - \frac{(-30)}{5} = 23$

17 + 6 = 23

23 = 23 ✓

-30 0

2) $7v^2 - 15 = 13$

+ 15 + 15

$7v^2 = 28$

7 7

$\sqrt{v^2} = \sqrt{4}$

v = ± 2

✓ $7(2)^2 - 15 = 13$

7(4) - 15 = 13

28 - 15 = 13

13 = 13✓

$7(-2)^2 - 15 = 13$

7(4) - 15 = 13

28 - 15 = 13

13 = 13✓

-2 0 2

3) $4d^3 + 47 = -61$

- 47 - 47

$4d^3 = -108$

4 4

$\sqrt[3]{d^3} = \sqrt[3]{-27}$

d = -3

✓4(-3)³ + 47 = -61

4(-27) + 47 = -61

-108 + 47 = -61

-61 = -61✓

-3 0

4) -51 = 20q - 3q

$\frac{-51}{17} = \frac{17q}{17}$

-3 = q

✓ -51 = 20(-3) - 3(-3)

-51 = -60 + 9

-51 = -51✓

-3 0

5) 19 = -9w + 8w

$\frac{19}{-1} = \frac{-w}{-1}$

-19 = w

✓ 19 = -9(-19) + 8(-19)

19 = 171 - 152

19 = 19✓

-19 0

6) 27 = -7y + 4y

$\frac{27}{-3} = \frac{-3y}{-3}$

-9 = y

✓ 27 = -7(-9) + 4(-9)

27 = 63 -36

27 = 27✓

-9 0

7) 2d - 24 = 8d

-2d -2d

$\frac{-24}{6} = \frac{6d}{6}$

-4 = d

✓ 2(-4) - 24 = 8(-4)

-8 - 24 = -32

-32 = -32✓

-4 0

8) 32 + z = 5z

- z - z

$\frac{32}{4} = \frac{4z}{4}$

8 = z

✓ 32 + (8) = 5(8)

40 = 40✓

0 8

9) 7b - 18 = b

-7b -7b

$\frac{-18}{-6} = \frac{-6b}{-6}$

3 = b

✓ 7(3) - 18 = (3)

21 - 18 = 3

3 = 3✓

0 3

10) $12k - 2 = 9k + 4$

$-9k + 2 \quad -9k + 2$

$\frac{3k}{3} = \frac{6}{3}$

$k = 2$

✓ $12(2) - 2 = 9(2) + 4$

$24 - 2 = 18 + 4$

$22 = 22$✓

11) $11 + 5a = 3a + 41$

$-11 \quad -3a \quad -3a \quad -11$

$\frac{2a}{2} = \frac{30}{2}$

$a = 15$

✓ $11 + 5(15) = 3(15) + 41$

$11 + 75 = 45 + 41$

$86 = 86$✓

12) $41 = 9c + 10 - 2c + 17$

$41 = 7c + 27$

$-27 \quad -27$

$\frac{14}{7} = \frac{7c}{7}$

$2 = c$

✓ $41 = 9(2) + 10 - 2(2) + 17$

$41 = 18 + 10 - 4 + 17$

$41 = 41$✓

13) $-97 = -15 - 11j + 3j - 18$

$-97 = -8j - 33$

$+ 33 \quad + 33$

$\frac{-64}{-8} = \frac{-8j}{-8}$

$8 = j$

✓ $-97 = -15 - 11(8) + 3(8) - 18$

$-97 = -15 - 88 + 24 - 18$

$-97 = -97$✓