Geometry

Evaluate the following expressions given the indicated value for the variable.

1) $14 - d + 13 \cdot 2$, $d = -6$

$14 - (-6) + 13 \bullet 2$

$14 + 6 + 26$

$\boxed{= 46}$

2) $48 \div 3(v)^2 - 4(v)$, $v = -2$

$48 \div 3(-2)^2 - 4(-2)$

$48 \div 3(4) - (-8)$

$16(4) + 8$

$64 + 8$

$\boxed{= 72}$

Solve, check and graph the following equations

3) $77 = 54 + k$

$\underline{-54 \quad -54}$

$\boxed{23 = k}$

✓ $77 = 54 + (23)$

$77 = 77$✓

0   23

4) $-51 = -16 + z$

$\underline{+16 \quad +16}$

$\boxed{-35 = z}$

✓ $-51 = -16t + (-35)$

$-51 = -51$✓

-35   0

5) $a^2 = 196$

$\sqrt{a^2} = \sqrt{196}$

$\boxed{a = \pm\, 14}$

✓ $(14)^2 = 196$ $(-14)^2 = 196$

$196 = 196$✓ $196 = 196$✓
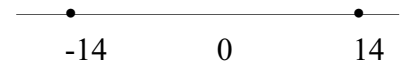
-14   0   14

6) $-8 = 5p + 7$

$\underline{-7 \qquad -7}$

$\dfrac{-15}{5} = \dfrac{5p}{5}$

$\boxed{-3 = p}$

✓ $-8 = 5(-3) + 7$

$-8 = -15 + 7$

$-8 = -8$✓

-3   0

7) $\dfrac{p}{9} - 11 = -7$

$\underline{+11 \qquad +11}$

$(9)\dfrac{p}{9} = 4(9)$

$\boxed{p = 36}$

✓ $\dfrac{(36)}{9} - 11 = -7$

$4 - 11 = -7$

$-7 = -7$✓

0   36

8) $b^2 + 14 = 183$

$\underline{-14 \quad -14}$

$\sqrt{b^2} = \sqrt{169}$

$\boxed{b = \pm\, 13}$

✓ $(13)^2 + 14 = 183$ $(-13)^2 + 14 = 183$

$169 + 14 = 183$ $169 + 14 = 183$

$183 = 183$✓ $183 = 183$✓
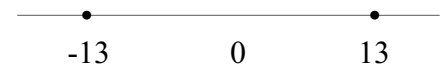
-13   0   13

9) $63 = \dfrac{v}{3} + 39$

$\underline{-39 \qquad -39}$

$(3)24 = \dfrac{v}{3}(3)$

$\boxed{72 = v}$

10) $-j - 17 = 28$

$\underline{+17 \; + 17}$

$\underline{-j = 45}$

-1   -1

11) $100 = 44 - 4m^2$

$\underline{-44 \; - 44}$

$\underline{56 = -4m^2}$

-4   -4

$$\checkmark \ 63 = \frac{(72)}{3} + 39$$

$$63 = 24 + 39$$

$$63 = 63 \ \checkmark$$

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0   72

$$j = -45$$

$$-(-45) - 17 = 28$$

$$45 - 17 = 28$$

$$28 = 28 \checkmark$$

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-45   0

$$-14 = m^2$$

No Real Solution