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

1) $k(-7) + 108 \div k^3 - 14$, $k = -3$

$(-3)(-7) + 108 \div (-3)^3 - 14$

$21 + 108 \div (-27) - 14$

$21 + (-4) - 14$

$$\boxed{= 3}$$

2) $12(30) - (3b)^2 \div 3^2 + b^3$, $b = 5$

$12(30) - (3(5))^2 \div 32 + 5^3$

$360 - (15)^2 \div 9 + 125$

$360 - 225 \div 9 + 125$

$360 - 25 + 125$

$$\boxed{= 460}$$

Solve, check, and graph the following equations.

3) $65 = -12x + 5$

$\underline{-5 \qquad\quad -5}$

$\dfrac{60}{-12} = \dfrac{-12x}{-12}$

$$\boxed{-5 = x}$$

✓ $65 = -12(-5) + 5$

$65 = 60 + 5$

$65 = 65$✓

-5   0

4) $-22 = -q - 8$

$\underline{+8 \qquad\quad +8}$

$\dfrac{-14}{-1} = \dfrac{-q}{-1}$

$$\boxed{14 = q}$$

✓ $-22 = -(14) - 8$

$-22 = -22$✓

0   14

5) $3x + 5x = 48$

$\dfrac{8x}{8} = \dfrac{48}{8}$

$$\boxed{x = 6}$$

✓ $3(6) + 5(6) = 48$

$18 + 30 = 48$

$48 = 48$✓

0   6

6) $x + 11x = -108$

$\dfrac{12x}{12} = \dfrac{-108}{12}$

$$\boxed{x = -9}$$

✓ $(-9) + 11(-9) = -108$

$-9 + (-99) = -108$

$-108 = -108$✓

-9   0

7) $8x - 3x = -40$

$\dfrac{5x}{5} = \dfrac{-40}{5}$
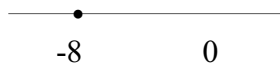
$$\boxed{x = -8}$$

✓ $8(-8) - 3(-8) = -40$

$-64 - (-24) = -40$

$-64 + 24 = -40$

$-40 = -40$✓

-8   0

8) $4x + 2x - 5 = 61$

$6x - 5 = 61$

$\underline{+5 \quad +5}$

$\dfrac{6x}{6} = \dfrac{66}{6}$

$$\boxed{x = 11}$$

✓ $4(11) + 2(11) - 5 = 61$

$44 + 22 - 5 = 61$

$61 = 61$✓

0   11

9) $3x + 7 + 3x = -35$
$6x + 7 = -35$
$\underline{-7 \quad -7}$
$\underline{6x = -42}$
$\quad 6 \qquad 6$

$\boxed{x = -7}$

✓ $3(-7) + 7 + 3(-7) = -35$
$-21 + 7 + (-21) = -35$
$-42 + 7 = -35$
$-35 = -35$✓

-7   0
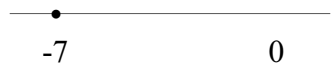
10) $7x + 19 - 6x = 15$
$x + 19 = 15$
$\underline{-19 \quad -19}$

$\boxed{x = -4}$

✓ $7(-4) + 19 - 6(-4) = 15$
$-28 + 19 + 24 = 15$
$15 = 15$✓

-4   0