Solve, check, and graph the following equations.

1) $-13x + 17x = -16$

$x = -4$

2) $3x - 7x + 41 = 29$

$x = 3$

3) $12 - 5x - 32 + 15x = 30$

$10x - 20 = 30$

$\underline{+20 \quad +20}$

$\underline{10x = 50}$

$10 \quad 10$

$\mathbf{x = 5}$

✓ $12 - 5(5) - 32 + 15(5) = 30$

$12 - 25 - 32 + 75 = 30$

$30 = 30$✓

4) $-121 - 4x = -15x$

$x = 11$

5) $8x - 11 = 3 - 6x$

$\underline{+6x \qquad\qquad +6x}$

$14x - 11 = 3$

$\underline{+11 \quad +11}$

$\underline{14x = 14}$

$14 \quad 14$

$\mathbf{x = 1}$

✓ $8(1) - 11 = 3 - 6(1)$

$8 - 11 = 3 - 6$

$-3 = -3$ ✓

6) $130 = -10(7 + 4x)$

$x = -5$

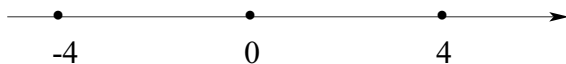7) $5(7x - 3) = 29x + 51$

$x = 11$

8) $5x^2 + 7 = 87$

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

$\underline{5x^2 = 80}$

$5 \quad 5$

$\sqrt{x^2} = \sqrt{16}$

$\mathbf{x = \pm 4}$

✓ $5(4)^2 + 7 = 87$ ✓ $5(-4)^2 + 7 = 87$

$5(16) + 7 = 87 \qquad 5(16) + 7 = 87$

$80 + 7 = 87 \qquad\quad 80 + 7 = 87$

$87 = 87$✓ $\qquad\qquad 87 = 87$✓

9) $4x^3 + 13 = -19$

$\underline{-13 \quad -13}$

$\underline{4x^3 = -32}$

$4 \qquad 4$

$\sqrt[3]{x^3} = \sqrt[3]{-8}$

$\mathbf{x = -2}$

✓ $4(-2)^3 + 13 = -19$

$4(-8) + 13 = -19$

$-32 + 13 = -19$

$-19 = -19$✓
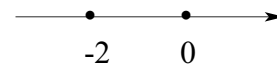
10) $7(-2y + 7) = -26y + 13$

$\quad -14y + 49 = -26y + 13$

$\quad \underline{+ 26y \qquad + 26y}$

$\quad 12y + 49 = 13$

$\quad \underline{- 49 \quad - 49}$

$\quad \underline{12y = -36}$

$\quad \quad 12 \quad \quad 12$

$\quad \quad y = -3$

$\checkmark 7(-2(-3) + 7) = -26(-3) + 13$

$\quad 7(6 + 7) = 78 + 13$

$\quad \quad 7(13) = 91$

$\quad \quad \quad 91 = 91 \; \checkmark$

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———•————————•——————→
   -3         0
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11) $-4x + 4 = -2(10 - x)$

$\quad \quad x = 4$