p. 35, #1-14 all, #23, #31

① $15 - 2x = 3x$

$+2x \quad +2x$

$15 = 5x$

$\boxed{x = 3}$

② $26 - 4s = 9s$

$+4s \quad +4s$

$26 = 13s$

$\boxed{s = 2}$

③ $5p - 9 = 2p + 12$

$-2p \quad -2p$

$3p - 9 = 12$

$3p = 21$

$\boxed{p = 7}$

④ $8g + 10 = 35 + 3g$

$-3g \quad -3g$

$5g + 10 = 35$

$5g = 25$

$\boxed{g = 5}$

⑤ $5t + 16 = 6 - 5t$

$+5t \quad +5t$

$10t + 16 = 6$

$10t = -10$

$\boxed{t = -1}$

⑥ $-3r + 10 = 15r - 8$

$-15r \quad -15r$

$-18r + 10 = -8$

$-18r = -18$

$\boxed{r = 1}$

⑦ $7 + 3x - 12x = 3x + 1$

$7 - 9x = 3x + 1$

$-3x \quad -3x$

$7 - 12x = 1$

$-12x = -6$

$\boxed{x = \frac{1}{2}}$

⑧ $w - 2 + 2w = 6 + 5w$

$3w - 2 = 6 + 5w$

$-5w \quad -5w$

$-2w - 2 = 6$

$-2w = 8$

$\boxed{w = -4}$

(9) $10(g+5) = 2(g+9)$

$10g + 50 = 2g + 18$

$-2g \qquad -2g$

$8g + 50 = 18$

$8g = -32$

$\boxed{g = -4}$

(10) $-9(t-2) = 4(t-15)$

$-9t + 18 = 4t - 60$

$-4t \qquad -4t$

$-13t + 18 = -60$

$-13t = -78$

$\boxed{t = 6}$

(11) $\frac{2}{3}(3x+9) = -2(2x+6)$

$2x + 6 = -4x - 12$

$+4x \qquad +4x$

$6x + 6 = -12$

$6x = -18$

$\boxed{x = -3}$

(12) $2(2t+4) = \frac{3}{4}(24 - 8t)$

$4t + 8 = 18 - 6t$

$+6t \qquad +6t$

$10t + 8 = 18$

$10t = 10$

$\boxed{t = 1}$

(13) $1.5(3y+2) - y = 2(8y-6)$

$4.5y + 3 - y = 16y - 12$

$3.5y + 3 = 16y - 12$

$-16y \qquad -16y$

$-12.5y + 3 = -12$

$-12.5y = -15$

$\boxed{y = 1.2}$

(14) $\frac{1}{2}(4x+5) = 9x - 12(x-1)$

$2x + \frac{5}{2} = 9x - 12x + 12$

$2x + \frac{5}{2} = -3x + 12$

$+3x \qquad +3x$

$5x + \frac{5}{2} = 12$

$5x = \frac{19}{2}$

$\boxed{x = \frac{19}{10}}$

(23) You and your friend drive toward each other. The equation $50h = 190 - 45h$ represents the number h hours until you and your friend meet. After how many hours will you meet?

$$50h = 190 - 45h$$
$$+45h \qquad +45h$$
$$95h = 190$$
$$h = 2$$

You and your friend will meet after 2 hours.

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(31) Two times the greater of two consecutive integers is 9 less than three times the lesser integer. What are the integers?

let n = the first integer ← lesser integer
then $n+1$ = the second integer ← greater integer

$$2(n+1) = 3n - 9$$
$$2n + 2 = 3n - 9$$
$$-3n \qquad -3n$$
$$-n + 2 = -9$$
$$-n = -11$$
$$n = 11$$
$$n + 1 = 12$$

The integers are 11 and 12.