3.4

$\frac{6}{0}$

undefined

$\frac{0}{6}$

0

$2x + 6 = x + 9$ (−x, −x)

$x + 6 = 9$ (−6, −6)

$x = 3$

Variable terms on one side

Constants on other side

Check

$2(3) + 6 \stackrel{?}{=} 3 + 9$

$12 = 12$

$$2x - 5 = 4x - 1$$

$$-2x \qquad -2x$$

$$-5 = 2x - 1$$

$$+1 \qquad +1$$

$$-4 = 2x$$

$$\frac{-4}{2} = \frac{2x}{2}$$

$$-2 = x$$

Check

$$2(-2) - 5 = 4(-2) - 1$$

$$-9 = -9$$

$6 - \frac{t}{4} = 8 + \frac{t}{2}$

$+\frac{t}{4} \qquad +\frac{t}{4}$

$6 \quad = 8 + \frac{3t}{4}$

$-8 \qquad -8$

$-2 = \frac{3t}{4}$

$\frac{4}{3} \cdot -2 = \frac{4}{3_1} \cdot \frac{3_1 t}{4_1}$

$\frac{-8}{3} = t$

$\frac{2t}{4}$

$+\frac{t}{4}$

$\frac{3t}{4}$

Check

$6 - \frac{\frac{-8}{3}}{\frac{4}{1}} = 8 + \frac{\frac{-8}{3}}{\frac{2}{1}}$

$6 - \left(\frac{-8}{3} \cdot \frac{1}{4_1}\right) = 8 + \left(\frac{-4}{3} \cdot \frac{1}{2_1}\right)$

$6 + \frac{2}{3} = 8 + \frac{-4}{3}$ $\quad \frac{24}{3} - \frac{4}{3}$

$6\frac{2}{3} = \frac{20}{3}$ $\quad \frac{20}{3}$

$\frac{20}{3} = \frac{20}{3}$

$\frac{8}{1} \overset{\times 3}{=} \frac{24}{3}$

$$\frac{x}{4} + 6 = \frac{x}{2} - 8$$

$-\frac{x}{4}$ $-\frac{x}{2}$

$\frac{1}{4}x - \frac{1}{2}x$

$$-\frac{1}{4}x + 6 = -8$$ -6 -6

$$-\frac{4}{1} \cdot -\frac{1}{4}x = -14 \cdot -4$$

$$x = 56$$

$\frac{14}{\times\ 4}$
56

$$\frac{56}{4} + 6 = \frac{56}{2} - 8$$

$$14 + 6 = 28 - 8$$

$$20 = 20$$

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