

Notes 1.4: Solving Equations with Variables on Both Sides

1. $6k - 3 = 2k + 13$

$$\begin{array}{r} -2k \qquad -2k \\ \hline 4k - 3 = 13 \\ +3 \qquad +3 \\ \hline 4k = 16 \\ \frac{4}{4} \qquad \frac{16}{4} \\ \hline \boxed{k = 4} \end{array}$$

take smaller number down

2. $9t + 7 = 3t - 5$

$$\begin{array}{r} -3t \qquad -3t \\ \hline 6t + 7 = -5 \\ -7 \qquad -7 \\ \hline 6t = -12 \\ \frac{6}{6} \qquad \frac{-12}{6} \\ \hline \boxed{t = -2} \end{array}$$

3. $\frac{2}{5}n - 9 = 7 - \frac{3}{5}n$ 4. $8 - \frac{1}{2}p = \frac{3}{2}p - 10$

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Page 1 of 2

$$2n - 9.5 = 7.5 - 3n$$

$$\begin{array}{r} 2n - 45 = 35 - 3n \\ +3n \qquad \qquad \qquad +3n \\ \hline \end{array}$$

$$\begin{array}{r} 5n - 45 = 35 \\ +45 \qquad +45 \\ \hline \end{array}$$

$$\frac{5n}{5} = \frac{80}{5}$$

$$\boxed{n = 16}$$

$$16 - p = 3p - 20$$

$$\begin{array}{r} +p \qquad +p \\ \hline 16 = 4p - 20 \\ +20 \qquad \qquad +20 \\ \hline \end{array}$$

$$\frac{36}{4} = \frac{4p}{4}$$

No common denominator $\boxed{p = 9}$

$$9 - \frac{1}{2}x = 10 + \frac{6}{3}x$$

$$90 - 35x = 100 + 12x$$