

3-4 Notes D1

Monday, 12 October 2026

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Solve equations with variables on both sides

1. $24 - 3m = 5m$

$$\begin{array}{r} +3m \quad +3m \\ 24 = 8m \\ \frac{24}{8} = \frac{8m}{8} \\ 3 = m \end{array}$$

2. $20 + c = 4c - 7$

$$\begin{array}{r} +7 \quad +7 \\ 27 + c = 4c \\ -c \quad -c \\ 27 = 3c \\ \frac{27}{3} = \frac{3c}{3} \quad (c = 9) \end{array}$$

3. $9 - 3k = 17 - 2k$

$$\begin{array}{r} -9 \quad -9 \\ -3k = 8 - 2k \\ +2k \quad +2k \\ -k = 8 \\ \frac{-k}{-1} = \frac{8}{-1} \quad (k = -8) \end{array}$$

4. $5z - 2 = 2(3z - 4)$

$$\begin{array}{r} 5z - 2 = 6z - 8 \\ +8 \quad +8 \\ 5z + 6 = 6z \\ -5z \quad -5z \\ 6 = z \end{array}$$

5. $3 - 4a = 5(a - 3)$

$$\begin{array}{r} 3 - 4a = 5a - 15 \\ +15 \quad +15 \\ 18 - 4a = 5a \\ +4a \quad +4a \\ 18 = 9a \\ \frac{18}{9} = \frac{9a}{9} \\ 2 = a \end{array}$$

6. $8y - 6 = \frac{2}{3}(6y + 15)$

$$\begin{array}{r} \frac{12}{3} y + \frac{30}{3} \\ 8y - 6 = 4y + 10 \\ +6 \quad +6 \\ 8y = 4y + 16 \\ -4y \quad -4y \\ 4y = 16 \\ \frac{4y}{4} = \frac{16}{4} \\ y = 4 \end{array}$$