

1.3

$$\begin{aligned}
 1) \quad & 2 - (-3a - 8) = 1 \\
 & 2 + 3a + 8 = 1 \\
 & 10 + 3a = 1 \\
 & \underline{-10 \quad -10} \\
 & \frac{3a}{3} = \frac{-9}{3} \\
 & a = -3
 \end{aligned}$$

$$\begin{aligned}
 3) \quad & -5(-4 + 2v) = -50 \\
 & 20 - 10v = -50 \\
 & \underline{-20 \quad -20} \\
 & -\frac{10v}{-10} = -\frac{70}{-10} \\
 & v = 7
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & 66 = 6(6 + 5x) \\
 & 66 = 36 + 30x \\
 & \underline{-36 \quad -36} \\
 & \frac{30}{30} = \frac{30x}{30} \\
 & 1 = x
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & 0 = -8(p - 5) \\
 & 0 = -8p + 40 \\
 & \underline{-40 \quad -40} \\
 & \frac{-40}{-8} = \frac{-8p}{-8} \\
 & 5 = p
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & -2 + 2(8x - 7) = -16 \\
 & -2 + 16x - 14 = -16 \\
 & 16x - 16 = -16 \\
 & \underline{\quad +16 \quad +16} \\
 & \frac{16x}{16} = \frac{0}{16} \\
 & x = 0
 \end{aligned}$$

$$\begin{aligned}
 11) \quad & -21x + 12 = -6 - 3x \\
 & \underline{\quad +21x \quad \quad +21x} \\
 & 12 = -6 + 18x \\
 & \underline{\quad +6 \quad +6} \\
 & \frac{18}{18} = \frac{18x}{18} \\
 & 1 = x
 \end{aligned}$$

$$\begin{aligned}
 13) \quad & -1 - 7m = -8m + 7 \\
 & \underline{\quad +8m \quad +8m} \\
 & -1 + m = 7 \\
 & \underline{\quad +1 \quad \quad +1} \\
 & m = 8
 \end{aligned}$$

$$\begin{aligned}
 15) \quad & 1 - 12r = 29 - 8r \\
 & \underline{\quad +12r \quad \quad +12r} \\
 & 1 = 29 + 4r \\
 & \underline{\quad -29 \quad -29} \\
 & \frac{-28}{4} = \frac{4r}{4} \\
 & -7 = r
 \end{aligned}$$

$$\begin{aligned}
 17) \quad & 20 - 7b = -12b + 30 \\
 & \underline{\quad +12b \quad +12b} \\
 & 20 + 5b = 30 \\
 & \underline{\quad -20 \quad -20} \\
 & \frac{5b}{5} = \frac{10}{5} \\
 & b = 2
 \end{aligned}$$

$$\begin{aligned}
 19) \quad & -32 - 24v = 34 - 2v \\
 & \underline{\quad +24v \quad \quad +24v} \\
 & -32 = 34 + 22v \\
 & \underline{\quad -34 \quad -34} \\
 & \frac{-66}{22} = \frac{22v}{22} \\
 & -3 = v
 \end{aligned}$$

$$\begin{aligned}
 21) \quad & -2 - 5(2 - 4m) = 33 + 5m \\
 & -2 - 10 + 20m = 33 + 5m \\
 & -12 + 20m = 33 + 5m \\
 & \underline{\quad \quad -5m \quad \quad -5m} \\
 & -12 + 15m = 33 \\
 & \underline{\quad +12 \quad \quad +12} \\
 & \frac{15m}{15} = \frac{45}{15} \\
 & m = 3
 \end{aligned}$$

$$\begin{aligned}
23) \quad & -4n + 11 = 2(1 - 8n) + 3n \\
& -4n + 11 = 2 - 16n + 3n \\
& -4n + 11 = 2 - 13n \\
& \underline{+13n \qquad +13n} \\
& 9n + 11 = 2 \\
& \underline{-11 \quad -11} \\
& \frac{9n}{9} = \frac{-9}{9} \\
& n = -1
\end{aligned}$$

$$\begin{aligned}
25) \quad & -6v - 29 = -4v - 5(v + 1) \\
& -6v - 29 = -4v - 5v - 5 \\
& -6v - 29 = -9v - 5 \\
& \underline{+9v \qquad +9v} \\
& 3v - 29 = -5 \\
& \underline{+29 \quad +29} \\
& \frac{3v}{3} = \frac{24}{3} \\
& v = 8
\end{aligned}$$

$$\begin{aligned}
27) \quad & 2(4x - 4) = -20 - 4x \\
& 8x - 8 = -20 - 4x \\
& \underline{+4x \qquad +4x} \\
& 12x - 8 = -20 \\
& \underline{+8 \quad +8} \\
& \frac{12x}{12} = \frac{-12}{12} \\
& x = -1
\end{aligned}$$

$$\begin{aligned}
29) \quad & -a - 5(8a - 1) = 39 - 7a \\
& -a - 40a + 5 = 39 - 7a \\
& -41a + 5 = 39 - 7a \\
& \underline{+41a \qquad +41a} \\
& 5 = 39 + 34a \\
& \underline{-39 \quad -39} \\
& \frac{-34}{34} = \frac{34a}{34} \\
& -1 = a
\end{aligned}$$

$$\begin{aligned}
31) \quad & -57 = -(-p + 1) + 2(6 + 8p) \\
& -57 = p - 1 + 12 + 16p \\
& -57 = 17p + 11 \\
& \underline{-11 \quad -11} \\
& \frac{-68}{17} = \frac{17p}{17} \\
& -4 = p
\end{aligned}$$

$$\begin{aligned}
33) \quad & -2(m - 2) + 7(m - 8) = -67 \\
& -2m + 4 + 7m - 56 = -67 \\
& 5m - 52 = -67 \\
& \underline{+52 \quad +52} \\
& \frac{5m}{5} = \frac{-15}{5} \\
& m = -3
\end{aligned}$$

$$\begin{aligned}
35) \quad & 50 = 8(7 + 7r) - (4r + 6) \\
& 50 = 56 + 56r - 4r - 6 \\
& 50 = 52r + 50 \\
& \underline{-50 \quad -50} \\
& \frac{0}{52} = \frac{52r}{52} \\
& 0 = r
\end{aligned}$$

$$\begin{aligned}
37) \quad & -8(n - 7) + 3(3n - 3) = 41 \\
& -8n + 56 + 9n - 9 = 41 \\
& n + 47 = 41 \\
& \underline{-47 \quad -47} \\
& n = -6
\end{aligned}$$

$$\begin{aligned}
39) \quad & -61 = -5(5r - 4) + 4(3r - 4) \\
& -61 = -25r + 20 + 12r - 16 \\
& -61 = -13r + 4 \\
& \underline{-4 \quad -4} \\
& \frac{-65}{-13} = \frac{-13r}{-13} \\
& 5 = r
\end{aligned}$$

$$\begin{aligned}
41) \quad & -2(8n - 4) = 8(1 - n) \\
& -16n + 8 = 8 - 8n \\
& \underline{+16n \qquad +16n} \\
& 8 = 8 + 8n \\
& \underline{-8 \quad -8} \\
& \frac{0}{8} = \frac{8n}{8} \\
& 0 = n
\end{aligned}$$

$$\begin{aligned}
43) \quad & -3(-7v + 3) + 8v = 5v - 4(1 - 6v) \\
& 21v - 9 + 8v = 5v - 4 + 24v \\
& 29v - 9 = 29v - 4 \\
& \underline{-29v \quad -29v} \\
& -9 = -4 \\
& \text{false, No Solution } \emptyset
\end{aligned}$$

$$45) -7(x - 2) = -4 - 6(x - 1)$$

$$-7x + 14 = -4 - 6x + 6$$

$$-7x + 14 = 2 - 6x$$

$$\begin{array}{r} +7x \phantom{+ 7x} \\ \hline \end{array}$$

$$14 = 2 + x$$

$$\begin{array}{r} -2 \phantom{- 2} \\ \hline \end{array}$$

$$12 = x$$

$$47) -6(8k + 4) = -8(6k + 3) - 2$$

$$-48k - 24 = -48k - 24 - 2$$

$$-48k - 24 = -48k - 26$$

$$\begin{array}{r} +48k \phantom{+ 48k} \\ \hline \end{array}$$

$$-24 = -26$$

*false*

*No Solution*  $\emptyset$

$$49) -2(1 - 7p) = 8(p - 7)$$

$$-2 + 14p = 8p - 56$$

$$\begin{array}{r} -8p \phantom{- 8p} \\ \hline \end{array}$$

$$-2 + 6p = -56$$

$$\begin{array}{r} +2 \phantom{+ 2} \\ \hline \end{array}$$

$$\frac{6p}{6} = \frac{-54}{6}$$

$$p = -9$$