

Name: Key!

Block:

Check your solutions against the solutions given on my website as you work!

### Algebra Worksheet 4

Solve for the unknown value in each equation below. Perform a check for questions on the left.

a)  $3(a-4) = 15$

$$\begin{aligned} 3a - 12 &= 15 \\ + 12 &+ 12 \\ 3a &= 27 \\ \div 3 &\div 3 \\ \underline{a} &= \underline{9} \end{aligned}$$

L R

$$\begin{aligned} 3(9-4) &= 15 \\ 3(5) & \\ 15 & \end{aligned}$$

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

$$\begin{aligned} 4 - 2d &= 2d - 1 \\ + 2d &+ 2d \\ 4 &= 4d - 1 \\ + 1 &+ 1 \\ 5 &= 4d \\ \div 4 &\div 4 \\ \underline{\frac{5}{4}} &= \underline{d} = \underline{1.25} \end{aligned}$$

b)  $5(2-2b) = 18$

$$\begin{aligned} 10 - 10b &= 18 \\ -10 &-10 \\ -10b &= 8 \\ \div (-10) &\div (-10) \\ b &= -\frac{8}{10} = -\frac{4}{5} \\ &= \underline{-0.8} \end{aligned}$$

L R

$$\begin{aligned} 5(2-2(-0.8)) &= 18 \\ 5(2+1.6) & \\ 5(3.6) & \\ 18 & \end{aligned}$$

e)  $2(e+3) = 5(e-1)$

$$\begin{aligned} 2e + 6 &= 5e - 5 \\ -2e &-2e \\ 6 &= 3e - 5 \\ + 5 &+ 5 \\ 11 &= 3e \\ \div 3 &\div 3 \\ \frac{11}{3} &= e = 3\frac{2}{3} \end{aligned}$$

c)  $4(3+2c) = 11c$

$$\begin{aligned} 12 + 8c &= 11c \\ -8c &-8c \\ 12 &= 3c \\ \div 3 &\div 3 \\ \underline{4} &= \underline{c} \end{aligned}$$

L R

$$\begin{aligned} 4(3+2(4)) &= 11(4) \\ 4(3+8) & \\ 4(11) & \\ 44 & \end{aligned}$$

f)  $-2(f-1) = 6(3-f)$

$$\begin{aligned} -2f - (-2) &= 18 - 6f \\ -2f + 2 &= 18 - 6f \\ + 6f &+ 6f \\ 4f + 2 &= 18 \\ -2 &-2 \\ 4f &= 16 \\ \div 4 &\div 4 \\ \underline{f} &= \underline{4} \end{aligned}$$

$$\begin{aligned}
 g) \quad 5g - 4 &= 3(2 - 2g) \\
 5g - 4 &= 6 - 6g \\
 +6g & \quad +6g \\
 11g - 4 &= 6 \\
 +4 & \quad +4 \\
 11g &= 10 \\
 \div 11 & \quad \div 11 \\
 \underline{g} &= \underline{\frac{10}{11}}
 \end{aligned}$$

$$\begin{array}{l}
 L \\
 5\left(\frac{10}{11}\right) - 4 \\
 \frac{50}{11} - \frac{44}{11} \\
 \frac{6}{11} \\
 \hline
 R \\
 3\left(2 - 2\left(\frac{10}{11}\right)\right) \\
 3\left(2 - \frac{20}{11}\right) \\
 3\left(\frac{22}{11} - \frac{20}{11}\right) \\
 3\left(\frac{2}{11}\right) \\
 \frac{6}{11} \\
 \hline
 \end{array}$$

$$\begin{aligned}
 j) \quad -2j - 1 &= 3j - 5 \\
 -2j - (-2) &= 3j - 5 \\
 -2j + 2 &= 3j - 5 \\
 +2j & \quad +2j \\
 2 &= 5j - 5 \\
 +5 & \quad +5 \\
 7 &= 5j \\
 \div 5 & \quad \div 5 \\
 \underline{\frac{7}{5}} &= \underline{j} = \underline{1.4}
 \end{aligned}$$

$$\begin{aligned}
 h) \quad 5h + 1 &= 3 - 3(h - 2) \\
 5h + 1 &= 3 - 3h - (-6) \\
 5h + 1 &= 3 - 3h + 6 \\
 5h + 1 &= 9 - 3h \\
 +3h & \quad +3h \\
 8h + 1 &= 9 \\
 -1 & \quad -1 \\
 8h &= 8 \\
 \div 8 & \quad \div 8 \\
 \underline{h} &= \underline{1}
 \end{aligned}$$

$$\begin{array}{l}
 L \\
 5(1) + 1 \\
 5 + 1 \\
 6 \\
 \hline
 R \\
 3 - 3((1) - 2) \\
 3 - 3(-1) \\
 3 + 3 \\
 6 \\
 \hline
 \end{array}$$

$$\begin{aligned}
 k) \quad 4k - 3 &= 2(k - 1) + 4 \\
 4k - 3 &= 2k - 2 + 4 \\
 4k - 3 &= 2k + 2 \\
 -2k & \quad -2k \\
 2k - 3 &= 2 \\
 +3 & \quad +3 \\
 2k &= 5 \\
 \div 2 & \quad \div 2 \\
 \underline{k} &= \underline{\frac{5}{2}} = \underline{2.5}
 \end{aligned}$$

$$\begin{aligned}
 l) \quad i - 1 &= 3(2i - 3) \\
 i - 1 &= 6i - 9 \\
 -i & \quad -i \\
 -1 &= 5i - 9 \\
 +9 & \quad +9 \\
 8 &= 5i \\
 \div 5 & \quad \div 5 \\
 \underline{\frac{8}{5}} &= \underline{i} \\
 \underline{1.6} &= \underline{i}
 \end{aligned}$$

$$\begin{array}{l}
 L \\
 (1.6) - 1 \\
 0.6 \\
 \hline
 R \\
 3(2(1.6) - 3) \\
 3(3.2 - 3) \\
 3(0.2) \\
 0.6 \\
 \hline
 \end{array}$$

$$\begin{aligned}
 l) \quad -2L + 5 &= -4(3 - L) \\
 -2L + 5 &= -12 - (-4L) \\
 -2L + 5 &= -12 + 4L \\
 +2L & \quad +2L \\
 5 &= -12 + 6L \\
 +12 & \quad +12 \\
 17 &= 6L \\
 \div 6 & \quad \div 6 \\
 \underline{\frac{17}{6}} &= \underline{L} \approx \underline{2.8} \\
 \underline{2\frac{5}{6}} &= \underline{L}
 \end{aligned}$$