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) $3(a-4) = 15$

$3a - 12 = 15$

$+12 \quad +12$

$3a = 27$

$\div 3 \quad \div 3$

$a = 9$

L: $3((9)-4)$, $3(5)$, 15 R: 15 ✓

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

$10 - 10b = 18$

$-10 \quad -10$

$-10b = 8$

$\div(-10) \quad \div(-10)$

$b = -\frac{8}{10} = -\frac{4}{5}$

$= -0.8$

L: $5(2-2(-0.8))$, $5(2+1.6)$, $5(3.6)$, 18 R: 18 ✓

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

$12 + 8c = 11c$

$-8c \quad -8c$

$12 = 3c$

$\div 3 \quad \div 3$

$4 = c$

L: $4(3+2(4))$, $4(3+8)$, $4(11)$, 44 R: $11(4)$, 44 ✓

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

$4 - 2d = 2d - 1$

$+2d \quad +2d$

$4 = 4d - 1$

$+1 \quad +1$

$5 = 4d$

$\div 4 \quad \div 4$

$\frac{5}{4} = d = 1.25$

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

$2e + 6 = 5e - 5$

$-2e \quad -2e$

$6 = 3e - 5$

$+5 \quad +5$

$11 = 3e$

$\div 3 \quad \div 3$

$\frac{11}{3} = e = 3\frac{2}{3}$

$= 3.\overline{6}$

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

$-2f - (-2) = 18 - 6f$

$-2f + 2 = 18 - 6f$

$+6f \quad +6f$

$4f + 2 = 18$

$-2 \quad -2$

$4f = 16$

$\div 4 \quad \div 4$

$f = 4$

g) $5g - 4 = 3(2 - 2g)$

$5g - 4 = 6 - 6g$

$+6g \quad +6g$

$11g - 4 = 6$

$+4 \quad +4$

$11g = 10$

$\div 11 \quad \div 11$

$g = \frac{10}{11}$

L: $5\left(\frac{10}{11}\right) - 4$

$\frac{50}{11} - \frac{44}{11}$

$\frac{6}{11}$

R: $3\left(2 - 2\left(\frac{10}{11}\right)\right)$

$3\left(2 - \frac{20}{11}\right)$

$3\left(\frac{22}{11} - \frac{20}{11}\right)$

$3\left(\frac{2}{11}\right)$

$\frac{6}{11}$ ✓

j) $-2(j - 1) = 3j - 5$

$-2j - (-2) = 3j - 5$

$-2j + 2 = 3j - 5$

$+2j \quad +2j$

$2 = 5j - 5$

$+5 \quad +5$

$7 = 5j$

$\div 5 \quad \div 5$

$\frac{7}{5} = j = 1.4$

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

$5h + 1 = 3 - 3h - (-6)$

$5h + 1 = 3 - 3h + 6$

$5h + 1 = 9 - 3h$

$+3h \quad +3h$

$8h + 1 = 9$

$-1 \quad -1$

$8h = 8$

$\div 8 \quad \div 8$

$h = 1$

L: $5(1) + 1$

$5 + 1$

6

R: $3 - 3((1) - 2)$

$3 - 3(-1)$

$3 + 3$

6 ✓

k) $4k - 3 = 2(k - 1) + 4$

$4k - 3 = 2k - 2 + 4$

$4k - 3 = 2k + 2$

$-2k \quad -2k$

$2k - 3 = 2$

$+3 \quad +3$

$2k = 5$

$\div 2 \quad \div 2$

$k = \frac{5}{2} = 2.5$

i) $i - 1 = 3(2i - 3)$

$i - 1 = 6i - 9$

$-i \quad -i$

$-1 = 5i - 9$

$+9 \quad +9$

$8 = 5i$

$\div 5 \quad \div 5$

$\frac{8}{5} = i$

$1.6 = i$

L: $(1.6) - 1$

0.6

R: $3(2(1.6) - 3)$

$3(3.2 - 3)$

$3(0.2)$

0.6 ✓

l) $-2L + 5 = -4(3 - L)$

$-2L + 5 = -12 - (-4L)$

$-2L + 5 = -12 + 4L$

$+2L \quad +2L$

$5 = -12 + 6L$

$+12 \quad +12$

$17 = 6L$

$\div 6 \quad \div 6$

$\frac{17}{6} = L$

$2\frac{5}{6} = L$