

Multi-Step Equations (Evens)

$$2) -6n - 2n = 16$$

$$-8n = 16$$

$$\frac{-8n}{-8} = \frac{16}{-8} \text{ (div. prop. =)}$$

$$n = -2$$

$$4) 0 = -5n + 2n$$

$$0 = -7n$$

$$\frac{0}{-7} = \frac{-7n}{-7} \text{ (div. prop. =)}$$

$$0 = n$$

$$6) r + 11 + 8r = 29$$

$$9r + 11 = 29$$

$$9r + 11 - 11 = 29 - 11 \text{ (subt. prop. =)}$$

$$9r = 18$$

$$\frac{9r}{9} = \frac{18}{9} \text{ (div. prop. =)}$$

$$r = 2$$

$$8) -10p + 9p = 12$$

$$-p = 12$$

$$\frac{-p}{-1} = \frac{12}{-1} \text{ (div. prop. =)}$$

$$p = -12$$

$$10) a - 2 + 3 = -2$$

$$a + 1 = -2$$

$$a + 1 - 1 = -2 - 1 \text{ (subt. prop. =)}$$

$$a = -3$$

$$12) 30 = -5(6n + 6)$$

$$30 = -30n - 30 \text{ (dist. prop. =)}$$

$$30 + 30 = -30n - 30 + 30 \text{ (add. prop. =)}$$

$$60 = -30n$$

$$\frac{60}{-30} = \frac{-30n}{-30} \text{ (div. prop. =)}$$

$$-2 = n$$

$$14) -13 = 5(1 + 4m) - 2m$$

$$-13 = 5 + 20m - 2m \text{ (dist. prop. =)}$$

$$-13 = 5 + 18m$$

$$-13 - 5 = 5 - 5 + 18m \text{ (subt. prop. =)}$$

$$-18 = 18m$$

$$\frac{-18}{18} = \frac{18m}{18} \text{ (div. prop. =)}$$

$$-1 = m$$

$$16) -2 = -(n - 8)$$

$$-2 = -n + 8 \text{ (dist. prop. =)}$$

$$-2 - 8 = -n + 8 - 8 \text{ (subt. prop. =)}$$

$$-10 = -n$$

$$\frac{-10}{-1} = \frac{-n}{-1} \text{ (div. prop. =)}$$

$$10 = n$$

$$\begin{aligned}
 8 &= 8v - 4(v+8) \\
 8 &= 8v - 4v - 32 \quad (\text{dist. prop.}) \\
 8 &= 4v - 32 \\
 8 + 32 &= 4v - 32 + 32 \quad (\text{add. prop.}) \\
 40 &= 4v \\
 \frac{40}{4} &= \frac{4v}{4} \quad (\text{div. prop.}) \\
 10 &= v
 \end{aligned}$$

$$\begin{aligned}
 20) -5n - 8(1+7n) &= -8 \\
 -5n - 8 - 56n &= -8 \quad (\text{dist. prop.}) \\
 -61n - 8 &= -8 \\
 -61n - 8 + 8 &= -8 + 8 \quad (\text{add. prop.}) \\
 -61n &= 0 \\
 \frac{-61n}{-61} &= \frac{0}{-61} \quad (\text{div. prop.}) \\
 n &= 0
 \end{aligned}$$

$$\begin{aligned}
 -8(-8x - 6) &= -6x - 22 \\
 64x + 48 &= -6x - 22 \quad (\text{dist. prop.}) \\
 64x + 6x + 48 &= -6x + 6x - 22 \quad (\text{add. prop.}) \\
 70x + 48 &= -22 \\
 70x + 48 - 48 &= -22 - 48 \quad (\text{subt. prop.}) \\
 70x &= -70 \\
 \frac{70x}{70} &= \frac{-70}{70} \quad (\text{div. prop.}) \\
 x &= -1
 \end{aligned}$$

$$\begin{aligned}
 24) -11 - 5a &= 6(5a + 4) \\
 -11 - 5a &= 30a + 24 \quad (\text{dist. prop.}) \\
 -11 - 5a + 5a &= 30a + 5a + 24 \quad (\text{add. prop.}) \\
 -11 &= 35a + 24 \\
 -11 - 24 &= 35a + 24 - 24 \quad (\text{subt. prop.}) \\
 -35 &= 35a \\
 \frac{-35}{35} &= \frac{35a}{35} \quad (\text{div. prop.}) \\
 -1 &= a
 \end{aligned}$$

$$\begin{aligned}
 5(2x+6) &= -4(-5-2x) + 3x \\
 10x + 30 &= 20 + 8x + 3x \quad (\text{dist. prop.}) \\
 10x + 30 &= 20 + 11x \\
 10x - 10x + 30 &= 20 + 11x - 10x \quad (\text{subt. prop.}) \\
 30 &= 20 + x \\
 30 - 20 &= 20 - 20 + x \quad (\text{subt. prop.}) \\
 10 &= x
 \end{aligned}$$