

Name: _____
 Date: _____
 Class: _____

Algebra
 Unit 2
 HW 2-6

1) Solve for x: $\frac{e(x+c)}{b} = 2 \cdot b$

$$\frac{e(x+c)}{e} = \frac{2b}{e}$$

$$\begin{array}{r} x+c = \frac{2b}{e} \\ -c \quad -c \end{array}$$

$$\boxed{x = \frac{2b}{e} - c}$$

2) Solve for b: $a(x+b) - c = d$

$$\frac{a(x+b)}{a} = \frac{d+c}{a}$$

$$\begin{array}{r} x+b = \frac{d+c}{a} \\ -x \quad -x \end{array}$$

$$\boxed{b = \frac{d+c}{a} - x}$$

3) Solve for a: $d = v_0 t + \frac{1}{2} a t^2$

$$\frac{d - v_0 t}{t^2} = \frac{\frac{1}{2} a t^2}{t^2}$$

$$\rightarrow 2 \left(\frac{d - v_0 t}{t^2} \right) = \left(\frac{1}{2} a \right) 2$$

$$\boxed{2 \left(\frac{d - v_0 t}{t^2} \right) = a}$$

4) Solve for F: $\frac{9}{5} C = \frac{5}{9} (F - 32) \cdot \frac{9}{5}$

$$\begin{array}{r} \frac{9}{5} C = F - 32 \\ +32 \quad +32 \end{array}$$

$$\boxed{\frac{9}{5} C + 32 = F}$$

5) 3 consecutive even integers are related in the following manner. 28 less than 3 times the sum of the largest and smallest is the same amount as 20 more than 5 times the middle. Find the largest of these integers.

x → 1st even
 x+2 → 2nd even
 x+4 → 3rd even

$$\begin{aligned} 3(x+x+4) - 28 &= 5(x+2) + 20 \\ 3(2x+4) - 28 &= 5x + 10 + 20 \\ 6x + 12 - 28 &= 5x + 30 \\ 6x - 16 &= 5x + 30 \\ -9x + 16 & \quad -5x + 16 \end{aligned}$$

$$\boxed{x = 46}$$

50

6) A stadium has 4 rows of seats; each row has 4 more seats than the row in front of it. There is a total of 184 seats. How many seats are in the 3rd row?

$x \rightarrow$ 1st row
 $x+4 \rightarrow$ 2nd row
 $x+8 \rightarrow$ 3rd row
 $x+12 \rightarrow$ 4th row

(48)

$$x + x + 4 + x + 8 + x + 12 = 184$$

$$4x + 24 = 184$$

$$\begin{array}{r} -24 \quad -24 \\ \hline \end{array}$$

$$\frac{4x}{4} = \frac{160}{4}$$

$$x = 40$$

7) Solve: $10x - 4(2 - 3x) + 14 = 31 + 8(x - 10) + 16x$

$$10x - 8 + 12x + 14 = 31 + 8x - 80 + 16x$$

$$22x + 6 = -49 + 24x$$

$$\begin{array}{r} -22x + 49 \\ \hline \end{array} \quad \begin{array}{r} +49 \quad -22x \\ \hline \end{array}$$

$$\frac{55}{2} = \frac{2x}{2}$$

$$x = 27.5$$