

## Equations Quiz

1.  $8 + 6x = 50$

$$8 + 6x - 8 = 50 - 8$$

$$6x = 42$$

$$\frac{6x}{6} = \frac{42}{6}$$

$$x = 7$$

2.  $-5a - 68 = 92$

$$-5a - 68 + 68 = 92 + 68$$

$$-5a = 160$$

$$\frac{-5a}{-5} = \frac{160}{-5}$$

$$a = -32$$

3.  $2k + 14 = 6k - 22$

$$2k + 14 - 2k = 6k - 22 - 2k$$

$$14 = 4k - 22$$

$$14 + 22 = 4k - 22 + 22$$

$$36 = 4k$$

$$\frac{36}{4} = \frac{4k}{4}$$

$$\boxed{9 = k}$$

$$4. \quad 4x + 3 - 2x = 15 - 5x + 9$$

$$4x + 3 - 2x + 5x = 15 - 5x + 9 + 5x$$

$$7x + 3 = 24$$

$$7x + 3 - 3 = 24 - 3$$

$$\frac{7x}{7} = \frac{21}{7}$$

$$\boxed{x = 3}$$

$$5. \quad 5(n-1) = 2(n+8)$$

$$5n - 5 = 2n + 16$$

$$5n - 5 - 2n = 2n + 16 - 2n$$

$$3n - 5 = 16$$

$$3n - 5 + 5 = 16 + 5$$

$$3n = 21$$

$$\frac{3n}{3} = \frac{21}{3}$$

$$\boxed{n=7}$$

$$6. \quad 5(3k - 6) = 6(2k - 3)$$

$$15k - 30 = 12k - 18$$

$$15k - 30 - 12k = 12k - 18 - 12k$$

$$3k - 30 = -18$$

$$3k - 30 + 30 = -18 + 30$$

$$3k = 12$$

$$\frac{3k}{3} = \frac{12}{3}$$

$$\boxed{k = 4}$$

$$7. \quad \frac{2}{3}(6x + 9) = \frac{1}{2}(10x - 2)$$

$$\frac{2 \times 6x}{3} + \frac{2 \times 9}{3} = \frac{1 \times 10x}{2} - \frac{1 \times 2}{2}$$

$$4x + 6 = 5x - 1$$

$$4x + 6 - 4x = 5x - 1 - 4x$$

$$+ 6 = 1x - 1$$

$$6 + 1 = x - 1 + 1$$

$$\boxed{7 = x}$$

$$8. \quad \frac{2}{3}(3m + 3) = \frac{1}{4}(4m + 28)$$

$$\frac{2 \times 3m}{3} + \frac{2 \times 3}{3} = \frac{1 \times 4m}{4} + \frac{1 \times 28}{4}$$

$$2m + 2 = m + 7$$

$$2m + 2 - m = m + 7 - m$$

$$m + 2 = 7$$

$$m + 2 - 2 = 7 - 2$$

$$\boxed{m = 5}$$

A cell phone company offers two plans:

Plan A : 120 free minutes,  
\$0.75 per additional  
minute

Plan B : 30 free minutes,  
\$0.25 per additional  
minute

Plan A

$$0.75(x-120)$$

Plan B

$$0.25(x-30)$$

"x" equals the  
number of  
minutes you use.

Which time for calls will result in the same cost for both plans?

- Model the problem with an equation
- Solve the problem.
- Verify the problem

$$b) \quad 0.75(x-120) = 0.25(x-30)$$

$$0.75x - 90 = 0.25x - 7.5$$

$$0.75x - 0.25x - 90 = 0.25x - 7.5 - 0.25x$$

$$0.5x - 90 = -7.5$$

$$0.5x - 90 + 90 = -7.5 + 90$$

$$0.5x = 82.5$$

$$\frac{0.5x}{0.5} = \frac{82.5}{0.5}$$

$$x = 165 \text{ minutes}$$

HW: Page 281 #s 12 & 14