Warm-Up:

1) Solve: $a + 8 - 2(a - 12) > 0$

$a + 8 - 2a + 24 > 0$

$-1a + 32 > 0$

$-1a > -32$

$a < 32$

2) The cost to have tile installed varies directly with the size of the room. If a room that is 100 square foot costs $1080 to install then how much will it cost to have a 320 square foot room tiled?

$$\frac{100 \text{ sq ft}}{\$1080} = \frac{320 \text{ sq ft}}{x}$$

$\boxed{\$3,456}$

3) Evaluate $f(x) = -x^2 + 7$ for $x = -2$

$f(-2) = -(-2)^2 + 7$

$= -(4) + 7$

$= -4 + 7$

$= \boxed{3}$

Day 6 Homework

1. Solve algebraically: $\begin{cases} y = 4x - 7 \\ y = 2x - 5 \end{cases}$

$4x - 7 = 2x - 5$
$2x = 2$
$x = 1$

$y = 4(1) - 7$
$y = 4 - 7 = -3$

$(1, -3)$

2. Solve algebraically: $\begin{cases} 3x + 2y = 7 \\ y = -3x + 11 \end{cases}$

$3x + 2(-3x + 11) = 7$
$3x - 6x + 22 = 7$
$-3x = -15$
$x = 5$

$y = -3(5) + 11$
$= -15 + 11$
$= -4$

$(5, -4)$

3. One group of people purchased 10 hot dogs and 5 soft drinks at a cost of $12.50. A second group bought 7 hot dogs and 4 soft drinks at a cost of $9.00. What is the cost of a single hot dog? What is the cost of a single drink?

$7(10h + 5d = 12.50)$
$-10(7h + 4d = 9.00)$

$70h + 35d = 87.50$
$-70h - 40d = -90.00$
$-5d = -2.50$
$d = 0.50$

$10h + 5(0.50) = 12.50$
$10h + 2.50 = 12.50$
$10h = 10$
$h = 1$

hotdog $1
drink 50¢

4. The sum of two numbers is 45. One number is 4 times the other. Find the numbers.

$x + y = 45$
$x = 4y$

$4y + y = 45$
$5y = 45$
$y = 9$

$x = 4(9)$
$x = 36$

36 and 9

5. One number is 7 less than the other number. The sum of the two numbers is 63. Find the numbers.

$x = y - 7$
$x + y = 63$

$y - 7 + y = 63$
$2y = 70$
$y = 35$

$x = 35 - 7$
$x = 28$

28 and 35

6. A jacket costs 4 times as much as a pair of shorts. Together they cost $75. How much is each item?

$j = 4s$
$j + s = 75$

$4s + s = 75$
$5s = 75$
$s = 15$

$j = 4(15) = 60$

jacket $60
shorts $15

7. Joseph is 9 years older than Susan. Their ages total 41. How old is each person?

$J = S + 9$
$J + S = 41$

$S + 9 + S = 41$
$2S = 32$
$S = 16$

$J = 16 + 9 = 25$

Joseph is 25
Susan is 16