Math 1 - One Variable Equation Review

Name: Key Per:

$8(4k-4) = -2k - 100$	Steps/Reasons
① $32k - 32 = -2k - 100$	① Distributive prop.
② $+2k \quad +2k$	② + prop =
③ $34k - 32 = -100$ $+32 \quad +32$	③ + prop =
④ $\frac{34k}{34} = \frac{-68}{34}$	④ ÷ prop =
$k = -2$	

$6x + 5 - 7x = 10 - 5x + 3$	Steps /Reasons
① $-1x + 5 = -5x + 13$	① Combine like terms
② $+5x \quad +5x$	② + prop =
③ $4x + 5 = 13$ $-5 \quad -5$	③ − prop =
④ $\frac{4x}{2} = \frac{8}{2}$	④ ÷ prop =
$x = 2$	

3) $\frac{n}{6} - 8 = -6$

$+8 \quad +8$

$\frac{n}{6} = 2 \cdot 6$

$n = 12$

4) $-118 = -6x - 4$

$+4 \quad +4$

$\frac{-114}{-6} = \frac{-6x}{-6}$

$19 = x$

5) $\frac{-5+a}{2} = -7 \cdot 2$

$-5 + a = -14$

$+5 \quad +5$

$a = -9$

6) $7(1 + 5m) = 147$

$7 + 35m = 147$

$-7 \quad -7$

$\frac{35m}{35} = \frac{140}{35}$

$m = 4$

7) $-8 + 6(5 + 6k) = -158$

$-8 + 30 + 36k = -158$

$22 + 36k = -158$

$-22 \quad -22$

$\frac{36k}{36} = \frac{-180}{36}$

$k = -5$

8) $8x - 3(4 + 2x) = 5(x - 3)$

$8x - 12 - 6x = 5x - 15$

$2x - 12 = 5x - 15$

$-5x \quad -5x$

$-3x - 12 = -15$

$+12 \quad +12$

$\frac{-3x}{-3} = \frac{-3}{-3}$

$x = 1$

9) Your family is moving into a new home. Rather than do the work yourselves, you get price quotes from two different moving companies. Starving Students Movers charges $100 for the first hour and $50 for subsequent hours. U-Pack Movers charges $60 for each hour. How has a better deal at 9 hours? When is the cost going to be the same for both moving companies? ***Define your variable.***

h = # of hours

$SS = 100 + 50h$

a) $h = 9$; $100 + 50(9) = \$550$

$U\text{-}Pack = 60h$

at $h = 9$; $60(9) = \boxed{\$540}$ better deal at 9 hrs

$100 + 50h = 60h$

$-50h \quad -50h$

$100 = 10h$

$10 \quad 10$

$\boxed{10 = h}$ → Cost will be the same at 10 hours for both companies

10) A cell phone company charges $30 per month plus $0.07 per minute. If Mr T's January cell phone bill was $59.40, how many minutes did he talk? *Write an equation and then solve.*

m = # of minutes

$30 + .07m = 59.40$

$-30 \quad -30$

$.07m = 29.40$

$m = 420$

Mr. T talked approximately 420 minutes

11) A person can pay $10 for a membership to the art museum and then go to the museum for just $1 per visit. What is the maximum number of visits a member of the art museum can make for a total cost of $50?

V = # of visits

$10 + 1V = 50$

$-10 \quad -10$

$1V = 40$

$V = 40$

The member visited the museum 40 times.

12) Kenya plans to make a down payment plus monthly payments in order to buy a motorcycle. At one dealer she would pay $2,500 down and $150 each month. At another dealer, she would pay $3,000 down and $125 each month. After how many months would the total amount paid be the same for both dealers? What would that amount be?

m = # of months

$2,500 + 150m = 3000 + 125m$

$-2,500 \quad -2500$

$150m = 500 + 125m$

$-125m \quad -125m$

$\frac{25m}{25} = \frac{500}{25}$

$m = 20$

$m = 20$

$2,500 + 150(20)$ 3,000

$\$5,500$

At 20 months, the amount paid would be the same. the amount would be $5,500.00.