Math 002 P1 **Name:** Solutions

Quiz # 6

October 21, 2014 No electronic devices or interpersonal communication allowed. Show work to get credit.

(1) Find all solutions of the equation $3(2x+1) - 4(3x-1) = x - 7$.

$6x + 3 \quad -12x + 4 = x - 7$) expand

$-6x + 7 = x - 7$) simplify

$14 = 7x$) +6x, +7

$\boxed{2 = x}$) ÷7

(2) Find all solutions of the equation $\frac{1}{2}x - \frac{3}{5} = \frac{1}{2}(x-3)$.

LCD = 10

$5x - 6 = 5x - 15$) ·10, expand

$-6 = -15$) -5x

contradiction!

$\boxed{\text{No solution}}$

(3) Write an expression that represents the value, in dollars, of q quarters.

$0.25q$ or $\frac{1}{4}q$

(4) Write a system of equations that represents the following situation. (You needn't solve the system, but you should be able to.) A total of \$1700 is divided between two investments, one paying 4% interest and the other paying 6% interest. After one interest period, the total interest earned was \$90. How much was invested in each account?

x = amount invested in 4% interest account

y = 6% " " "

$1700 = x + y \Rightarrow y = 1700 - x$ ①

$90 = 0.04x + 0.06y$ ②

Plug ① into ②

$90 = 0.04x + 0.06(1700 - x)$

$90 = -0.02x + 102$) simplify

$0.02x = 12$) +0.02x, -90

$x = 600$) ÷0.02

$y = 1100$) substitute in ①

∴ \$600 in 4% account, \$1100 in 6% account