Word Problems: Systems

Algebra 7.6

Solve each using a system of equations.

1. How much of a 15% vinegar solution should be added to a 35% vinegar solution to make 12 liters of a 20% vinegar solution?

<u>Set Up:</u>

Let _____ = _____

<u>Table:</u>

	Percent	Amt
Mixture A		
Mixture B		
Total		

2. How many gallons of paint with 40% blue pigment should be added to paint that contains pure (100%) blue pigment to create 20 gallons of a paint that contains 85% blue pigment?

<u>Set Up:</u>

Let _____ = _____

<u>Table:</u>

	Percent	Amt
Mixture A		
Mixture B		
Total		

3. You are taxed at a rate of 5% for all online purchases and 8.5% for all in-store purchases. If you pay a total of 40$ in taxes in addition to spending $500 on purchases (pre-tax), how much money did you spend online, and how much was spent in the store? (before tax, to the cent)

Equations: $0.05x + 0.085y = 40$

(x) online: _____

_____

(y) in-store: _____

show work below!

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4. You have a dish full of nickels and quarters. If there are 16 coins together worth $2.20, how many of each coin do you have?

Equations: ___$n + q = 16$___   nickels: _____

_____   quarters: _____

show work below!

5. Two men ask you to guess their ages based on the following clues:
    The sum of their ages is 76. One of the men is 16 years older than twice the age of the other.

Equations: ___$x + y = 76$___   (x) 1st man: _____

_____   (y) 2nd man: _____

show work below!

6. When the digits of a two-digit number are switched, the resulting number is 18 less than the original. If the sum of the digits in the number is 12, find both numbers (show work as a system of equations, do not use guess-and-check)

hint: Using x as the tens digit, y as the ones digit. 10x+y is the original number, 10y+x is the number after the digits are switched.

Equations: ___$x + y = 12$___   Bigger #: _____

_____   Smaller #: _____

show work below!