

Answer Key.

System Word Problems Day 2 Homework

1. How many quarts of cream containing 36% butterfat must be added to 100 quarts of milk containing 3% butterfat to produce 4% milk?

$$.36x + .03(100) = .04(x + 100)$$

$$.36x + 3 = .04x + 4$$

$$.32x = 1$$

$$x = 3.125$$

$3\frac{1}{8}$ quarts

2. Al invested \$10,000 in two savings accounts, one that paid 4% and the other 5%. If his total earnings in one year was \$480, then how much was invested at each rate?

$$.04(x) + (.05)(10000 - x) = 480$$

$$.04x + 500 - .05x = 480$$

$$-.01x = -20$$

$$x = 2000$$

2,000 @ 4%

8,000 @ 5%

3. Henry leaves town at noon on a bicycle traveling west at a rate of 15 mph. At 4:00 pm Betty leaves town in a car traveling in the same direction at a rate of 45 mph. How many hours will it take Betty to catch Henry?

$$15(t + 4) = 45t$$

$$15t + 60 = 45t$$

$$60 = 30t$$

$$2 = t$$

$$H = 15(t + 4)$$

$$B = 45(t)$$

2 hours

4. Jennie leaves school in a car traveling north at a rate of 45 mph. At the same time Albert leaves school in a car traveling south at a rate of 55 mph. In how many hours will Albert and Jennie be 250 miles apart?

Jennie 45t

Albert 55t

$$45t + 55t = 250$$

$$100t = 250$$

$$t = 2.5 \text{ hours}$$