Algebra 1 Bellwork Tuesday, February 9, 2016

1. You were given $200 for your birthday and opened a savings account. You plan on putting $25 in the account each week. Your friend started a savings account at the same time with $1280.
Your friend plans on taking out $15 each week.
Write and solve a system of equations to find out the number of weeks it will take until you two have the same amount in your accounts.

2. On a farm there are only cows and ducks. The number of ducks is one more than three times the number of cows. There is a total of 122 legs for these animals. Write and solve a system of equations to find the number of cows and ducks on the farm.

3. Solve this system of equations using substitution.
$y = -2x + 5$ $8x + 4y = -12$

Algebra 1 Bellwork Tuesday, February 9, 2016 ANSWERS

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You: $T = 200 + 25w$
Friend: $T = 1280 - 15w$
T = TOTAL $ IN ACCOUNT w = # WKS

$w = 27$ weeks

$200 + 25w = 1280 - 15w$
$+15w \quad +15w$
$200 + 40w = 1280$
$-200 \quad -200$
$40w = 1080$
$w = \frac{1080}{40}$

2. On a farm there are only cows and ducks. The number of ducks is one more than three times the number of cows. There is a total of 122 legs for these animals. Write and solve a system of equations to find the number of cows and ducks on the farm.

c = # cows
d = # ducks

$d = 3c + 1$
$2d + 4c = 122$

$2(3c+1) + 4c = 122$
$6c + 2 + 4c = 122$
$10c + 2 = 122$
$-2 \quad -2$
$10c = 120$
$c = 12$

$d = 3(12) + 1$
$= 36 + 1 = 37$

12 cows & 37 ducks

3. Solve this system of equations using substitution.
$y = -2x + 5$ $8x + 4y = -12$

$8x + 4(-2x+5) = -12$
$8x - 8x + 20 = -12$
$20 = -12$

NO SOLUTION