Bellwork   Alg 2A   Friday, November 11, 2016

1. You are trying to decide between two health clubs to join. One club charges a $98 sign-up fee then $12 per month. The other club charges a $50 sign-up fee then $15 per month. After how many months will the total charges for the two clubs be the same?

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 amongst these animals. Find the number of cows and ducks on the farm.

1st club $y = 98 + 12m$

2nd club $y = 50 + 15m$

$m = $ #months
$y = $ TOTAL COST

$98 + 12m = 50 + 15m$
$-12m \qquad\qquad -12m$

$98 = 50 + 3m$
$-50 \quad -50$

$48 = 3m$
$\frac{48}{3} = \frac{3m}{3}$
$m = 16$

after 16 months you will pay the same amount

$c = $ #cows
$d = $ # ducks

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

$4c + 2(3c+1) = 122$
$4c + 6c + 2 = 122$
$10c + 2 = 122$
$\qquad -2 \qquad -2$
$\frac{10c}{10} = \frac{120}{10}$
$c = 12$

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

12 cows and 37 ducks

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