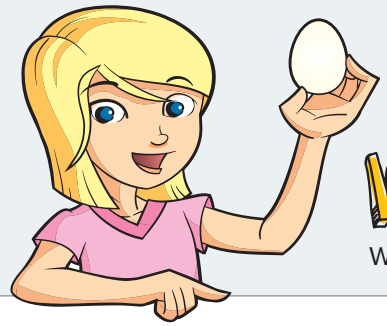
EGGS in Schools

It all Started with an Egg

name

Constructing simple equations to solve problems (7.EE.B.4)



Write and Solve

Write an equation to solve each problem. Then solve the problem.

1. Mac Donald loved her first chicken, Eggberta, so she started buying chickens. Before long, Mac had nine hens and she needed three coops. One coop cost $149.99, but if Mac bought two or more coops, each one would cost $15 less. How much would three coops cost?

Equation: _____

2. By the time Mac was 18, she had 25 hens and was selling their eggs to pay for their food and care. Mac paid $14.39 for each 50-pound bag of feed. She fed each hen 1 1/2 pounds of food a week. How much did Mac spend to feed one hen for one week?

Equation: _____

2a. How much did Mac spend to feed 25 hens for one week?

Equation: _____

2b. How much did Mac spend to feed 25 hens for one year?

Equation: _____

3. After she graduated from college, Mac went to work for Eggletons' Egg Farm. On average, each of the farm's 200,000 hens laid one egg every 26 hours. About how many eggs would one hen lay in seven days?

Equation: _____

3a. On average, how many eggs would 200,000 hens lay in seven days?

Equation: _____

3b. On average, how many eggs would 200,000 hens lay in one year?

Equation: _____

4. After a few years, Mac started her own egg farm, Mac Donald's Eggs. She had 1,000 chickens at first. Within two years, Mac had 65,000 chickens on her egg farm. If Mac adds the same number of chickens each year, when will she have at least 200,000 hens?

Equation: _____

Bonus: Use information from above and write an equation to find out how many dozens of eggs Mac's 75,000 hens could produce in one week if they lay eggs at the same rate as Egglestons' hens. Then solve the equation.

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Answer Key

Equations will vary.

1. 3 • ($149.99 – $15.00) = x; x = $404.97

2. 1.5 • ($14.39 ÷ 50) = x; x = $0.43

2a. 25 • [1.5 • ($14.39 ÷ 50)] = x; x = $10.75

2b. 52 • {25 [1.5 • ($14.39 ÷ 50)]} = x; x = $559.00

3. (7 • 24) ÷ 26 = x; x = 6.46 eggs

3a. 200,000 • [(7 • 24) ÷ 26] ≈ x; x ≈ 1,292,000 eggs

3b. 52 • {200,000 • [(7 • 24) ÷ 26]} ≈ x; x ≈ 67,184,000 eggs

4. 200,000 ÷ [(65,000 – 1,000) ÷ 2] = x; x = 6 1/4 years

BONUS {75,000 • [(7 x 24) ÷ 26]} ÷ 12 ≈ x; x ≈ 40,375 dozens

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