

Solving proportions essay sample

[Science](#), [Mathematics](#)



This week I learned about solving proportions. Rightfully so, on this assignment I have to prove or show what I've learned and retained by solving two problems. In this essay I will attempt to solve two problems from our textbook, the first one is problem 56 located on page 437 and the second one is problem 10 located on page 444 of our Elementary and Intermediate Algebra textbook. During this process I will incorporate the four math vocabulary words required, which are extraneous, proportion, cross multiply, and extreme-means which will be in bold. Problem number 56 located on page 437 states and asks the following about bear population. “ To estimate the size of the bear population on the Keweenaw Peninsula, conservationist captured, tagged, and released 50 bears.

One year later, random sample of 100 bears included only 2 tagged bears. What is the conservationist's estimate of the size of the bear population?” (Dogupolski, 2012). Since this is a ratio equation I will use b for the variable, b equaling the bear population which is what we need to find. The first thing I did was to set up the two ratios, place the b for the variable which equals the bear population in this proportion. Then I cross multiply the extreme-means property as shown below.

$$2 * b = 100 * 50$$

$$2b = 5000$$

Because we want to solve for b I had to isolate it by dividing both sides of the proportion by 2. This gave me the answer of 2500. Keep in mind that since the denominator was not zero this equation does not merit to be considered extraneous. $2b = 2500$

This is the estimated size of the bear population according to conservationists. This problem is a little more complicated for me so here goes nothing. For this second problem I will solve for y . I will do this by first cross multiplying the extreme-means since this is a single fraction on both sides as you can see below.

The problem below is a proportion.

$$\frac{y-1}{x+3} = \frac{-3}{4}$$

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$$(y-1) \cdot 4 = (x+3) \cdot (-3)$$

I then cross multiply the x and y which are the extreme-means $4y-4 = -3x-9$

and then distribute the 4 and the -3. $4y = -3x-9+4$ add 4 to both sides

$$4y = -3x-5 \text{ divide both sides by 4}$$

$y = -\frac{3}{4}x - \frac{5}{4}$ both of these fractions are in parentheses the x and $-$ are outside

the () $\frac{4}{4}$ The linear equation in the form of $y = mx+b$ with the slope of $-\frac{3}{4}$, $\frac{4}{4}$

I hope that I've covered everything in my essay and really looking forward for some great feedback.

References

Dugopolski, M. (2012). Elementary and Intermediate Algebra (4th ed.). New York, NY: McGraw-Hill Publishing.