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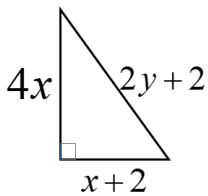
Pre Calculus 11: HW Section 8.3 Solving Problems Involving Linear & Quadratic Systems

1. Three basketballs and one volleyball costs \$155. Two basketballs and three volleyballs costs \$220. Determine the cost of one basketball and the cost of one volleyball.
2. Tickets for a school baseball game cost \$4 for adults and 2.50 for students. If 1300 people attended and ticket sales was \$4000, how many students and adults attended?
3. Tom invested \$500, part at BMO earning 7% interest, and part in equity stocks earning 10% a year. After one year, he earned \$44. How much of the \$500 did he invest with BMO?
4. Steve invested a total of \$2500 between stocks and bonds, divided unevenly. The Bonds paid 8% a year and stocks made a return of 12% a year. If the amount earned from each investment yielded the same amount of interest, how much did he invest with each?
5. The relationship between Celsius and Fahrenheit is a linear relationship. 20 degrees Celsius is 68 degrees Fahrenheit. 10 degrees Celsius is 50 degrees Fahrenheit. Write an equation for Celsius and Fahrenheit.

6. 100km/hr is equivalent to 62.1 miles per hour. 60km/hr is equivalent to 37.3 miles per hour. If the relationship between the two speeds is linear, write an equation to convert km/hr to miles per hour.

7. The monthly cost for a phone plan with Rogers is \$50 a month for 200 free day time minutes and then 5cents for each additional minute. The monthly cost for Bell is \$25 a month for 100 free day time minutes and then 15 cents for each additional minute. How many minutes would I need to use a month for the phone plans to cost the same?

8. Given the right triangle below, the perimeter is 112 and the area is $33y + 12$.



a) Write an expression for the perimeter in terms of “x” and “y”

b) write an expression for the area

c) Solve the system for “x” and “y”

9. In physics, the distance an accelerating object travels is given by the formula: $d = v_0t + \frac{1}{2}at^2$. The final velocity is given by: $v_f = v_0 + at$, where “a” is the acceleration, “t” is the amount of time, and “v₀” is the initial speed. A moving vehicle accelerates at $5m/s^2$ [acceleration] to $25m/s$ [v_f] and travels 52.5m. What was the initial velocity and the time required?