

Notes and Calculators are okay. No book. Each group will turn in one write up.

What to turn in: (one report per group)

Your report should include the following:

1. **Introduction:** Explain what the activity was asking you to do.
2. **Answers to Questions and Analysis:** Include answers to all of the questions asked and graphs.
3. **Response:** Write a paragraph making a recommendation about what to buy. Explain what your recommendation means in terms of profit and purchases. Be thorough.
4. **Conclusions:** Explain in a few sentences what math you learned here, what particular concepts and problem solving strategies helped you solve this problem, how can you connect this to anything outside the classroom?

Include **pictures** of the materials, experimental set-up and group members performing the experiment. (Two or three pictures would be great)

The Math Club is sponsoring a drink booth at a school activity. They intend to sell bottles of water and cans of soda. Use the information to answer the following questions.

Cost of the drinks:

Water \$0.20 each Soda \$0.60 each

Let $x =$ *the # of bottles of water sold* and
 $y =$ *the # of cans of soda sold.*



1. Write the expression for the total number of drinks.
2. The group's cooler holds 500 drinks.
 - a) List three different pairs of numbers that x and y could be.
 - b) Plot these three points in the first quadrant using appropriate scales. (Why only the first quadrant?)
 - c) Write the equation representing the number of drinks.
 - d) Graph the equation.
 - e) They do not have to fill the cooler. Shade the part of the plane that includes purchasing 500 or fewer drinks.

The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
4.
 - a) Write the expression for the profit that they receive if they sell all of the water.
 - b) Write the expression for the profit that they receive if they sell all of the soda.
 - c) Write the expression for the total profit that they receive if they sell everything.



The club wants to make enough money to make a \$350 purchase.

5. Write the equation representing a total profit of \$350.
6. Graph the profit equation in the same plane as the other line. Shade the part of the plane that represents earning at least \$350.
7. Describe in words the meaning of the part that is double shaded.

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The Math Club is sponsoring a drink booth at a school activity. They intend to sell bottles of water and cans of soda. Use the information to answer the following questions.

Cost of the drinks:

Water \$0.15 each Soda \$0.60 each

Let $x =$ *the # of bottles of water sold and*

$y =$ *the # of cans of soda sold.*



1. Write the expression for the total number of drinks.
2. The group's cooler holds 500 drinks.
 - a) List three different pairs of numbers that x and y could be.
 - b) Plot these three points in the first quadrant using appropriate scales. (Why only the first quadrant?)
 - c) Write the equation representing the number of drinks.
 - d) Graph the equation.
 - e) They do not have to fill the cooler. Shade the part of the plane that includes purchasing 500 or fewer drinks.

The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
4.
 - a) Write the expression for the profit that they receive if they sell all of the water.
 - b) Write the expression for the profit that they receive if they sell all of the soda.
 - c) Write the expression for the total profit that they receive if they sell everything.



The club wants to make enough money to make a \$360 purchase.

5. Write the equation representing a total profit of \$360.
6. Graph the profit equation in the same plane as the other line. Shade the part of the plane that represents earning at least \$360.
7. Describe in words the meaning of the part that is double shaded.

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Cost of the drinks:

Water \$0.15 each Soda \$0.65 each

Let $x =$ *the # of bottles of water sold* and
 $y =$ *the # of cans of soda sold.*



1. Write the expression for the total number of drinks.
2. The group's cooler holds 500 drinks.
 - a) List three different pairs of numbers that x and y could be.
 - b) Plot these three points in the first quadrant using appropriate scales. (Why only the first quadrant?)
 - c) Write the equation representing the number of drinks.
 - d) Graph the equation.
 - e) They do not have to fill the cooler. Shade the part of the plane that includes purchasing 500 or fewer drinks.

The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
4.
 - a) Write the expression for the profit that they receive if they sell all of the water.
 - b) Write the expression for the profit that they receive if they sell all of the soda.
 - c) Write the expression for the total profit that they receive if they sell everything.



The club wants to make enough money to make a \$370 purchase.

5. Write the equation representing a total profit of \$370.
6. Graph the profit equation in the same plane as the other line. Shade the part of the plane that represents earning at least \$370.
7. Describe in words the meaning of the part that is double shaded.

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The Math Club is sponsoring a drink booth at a school activity. They intend to sell bottles of water and cans of soda. Use the information to answer the following questions.

Cost of the drinks:

Water \$0.35 each Soda \$0.80 each

Let $x =$ *the # of bottles of water sold* and
 $y =$ *the # of cans of soda sold.*



1. Write the expression for the total number of drinks.
2. The group's cooler holds 500 drinks.
 - a) List three different pairs of numbers that x and y could be.
 - b) Plot these three points in the first quadrant using appropriate scales. (Why only the first quadrant?)
 - c) Write the equation representing the number of drinks.
 - d) Graph the equation.
 - e) They do not have to fill the cooler. Shade the part of the plane that includes purchasing 500 or fewer drinks.

The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
4.
 - a) Write the expression for the profit that they receive if they sell all of the water.
 - b) Write the expression for the profit that they receive if they sell all of the soda.
 - c) Write the expression for the total profit that they receive if they sell everything.



The club wants to make enough money to make a \$280 purchase.

5. Write the equation representing a total profit of \$280.
6. Graph the profit equation in the same plane as the other line. Shade the part of the plane that represents earning at least \$280.
7. Describe in words the meaning of the part that is double shaded.
8. Write a paragraph making a recommendation about what to buy. Explain what your recommendation means in terms of profit and purchases. Be thorough.

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The Math Club is sponsoring a drink booth at a school activity. They intend to sell bottles of water and cans of soda. Use the information to answer the following questions.

Cost of the drinks:

Water \$0.40 each Soda \$0.85 each

Let x = the # of bottles of water sold and

y = the # of cans of soda sold.



1. Write the expression for the total number of drinks.
2. The group's cooler holds 500 drinks.
 - a) List three different pairs of numbers that x and y could be.
 - b) Plot these three points in the first quadrant using appropriate scales. (Why only the first quadrant?)
 - c) Write the equation representing the number of drinks.
 - d) Graph the equation.
 - e) They do not have to fill the cooler. Shade the part of the plane that includes purchasing 500 or fewer drinks.

The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
4.
 - a) Write the expression for the profit that they receive if they sell all of the water.
 - b) Write the expression for the profit that they receive if they sell all of the soda.
 - c) Write the expression for the total profit that they receive if they sell everything.



The club wants to make enough money to make a \$250 purchase.

5. Write the equation representing a total profit of \$250.
6. Graph the profit equation in the same plane as the other line. Shade the part of the plane that represents earning at least \$250.
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Cost of the drinks:

Water \$0.10 each Soda \$0.80 each

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The club charges \$1.00 for the water and \$1.25 for the soda.

3. How much does the club profit per bottle of water? Per can of soda?
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The club wants to make enough money to make a \$320 purchase.

5. Write the equation representing a total profit of \$320.
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