

### Solving Systems of Equations Word Problems – Classwork

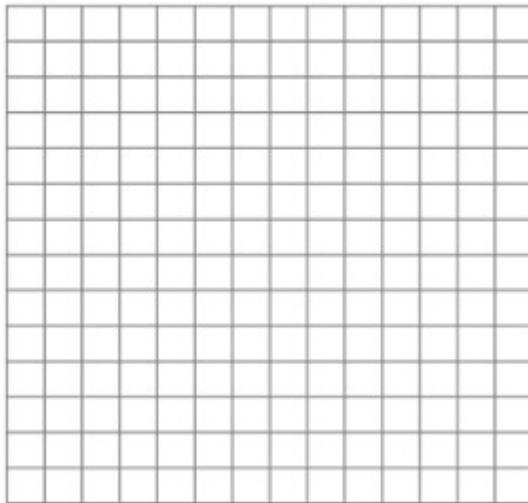
Directions: For each problem, determine the *independent* ( $x$ ) and *dependent* ( $y$ ) variables by annotating the text. Write the system of equations. Graph the system to answer the questions that follow.

1. A GameSwap membership costs \$20 and includes one game per month for \$5. Non-members can get one game a month for \$7.

Independent variable ( $x$ ): \_\_\_\_\_ Dependent variable ( $y$ ): \_\_\_\_\_

System of equations: {

Graph:



- a. When does it make more sense to be a member? How do you know?
- b. When does it make more sense to be a non-member? How do you know?
- c. Is there ever a time where it wouldn't matter whether you were a member or not? Explain.
- d. If you were a member, how much would you pay all together after 2 years? Show your work.

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2. To rent scooters, Sam’s Scooters charges a \$30 fee plus \$8 per hour. Rosie’s charges a \$20 fee plus \$10 per hour.

Independent variable (x): \_\_\_\_\_ Dependent variable (y): \_\_\_\_\_

System of equations:  $\left\{ \right.$

Graph:



- a. When does it make more sense to rent a scooter from Rosie’s? How do you know?
- b. When does it make more sense to rent a scooter from Sam’s? How do you know?
- c. Is there ever a time where it wouldn’t matter which store to choose? Explain.
- d. If you were renting a scooter from Rosie’s, how much would you pay if you were planning on renting for 7 hours? Show your work.

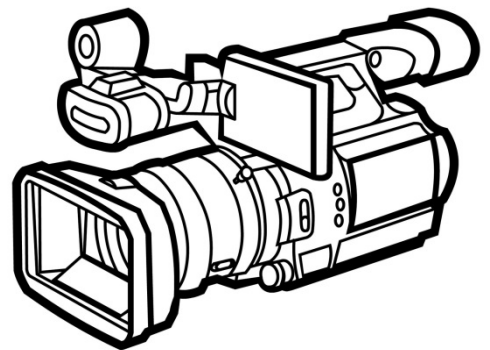
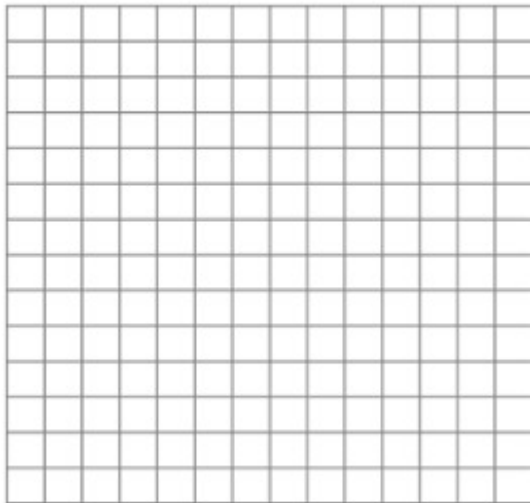
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3. You need to rent a video camera for your school project. Murphy’s Camera charges a \$30 rental fee plus \$35 per day. Allied Rental charges a \$45 rental fee plus \$30 per day. Which company should you choose?.

Independent variable (x): \_\_\_\_\_ Dependent variable (y): \_\_\_\_\_

System of equations: {

Graph:



- a. When does it make more sense to rent a camera from Murphy’s? How do you know?
- b. When does it make more sense to rent a camera from Allied Rental? How do you know?
- c. Is there ever a time where it wouldn’t matter which store to choose? Explain what this means in the context of a “system of equations.”
- d. If you were renting a camera for 3 days, how much money would you pay for each store? Show all work.

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