

1) A rectangular page is designed to contain 64 square-inches of print. The margins on top and bottom are 1-inch and the margins on the left and right are 1.5-inches.

a) Write an equation to represent the area of the entire page with respect to the width of the printed region,  $x$ .

b) If the width of the printed region was 6-inches, what would the dimensions of the entire page be?

c) Use a graphing calculator to determine the dimensions of the entire page that would minimize the amount of paper used.

2) A family drove 1080 miles to their vacation lodge. Because of traffic, their average speed for the trip home was 6 miles per hour slower and took 2.5 hours longer. Determine their average speed on the way to the lodge.

3) Working together, two people can paint a house in 8 hours. Working alone, one person takes 2 hours longer to complete the task than the other. How long would it take each person to paint the house on their own?

4) Your local phone company charges a one-time installation fee of \$65 and a monthly fee of \$32. How many months of service would you have to have in order for the average cost per month to be \$33.25?

5) It costs a manufacturing company \$8 to produce one can of paint. If the initial investment in the production line was \$50,000, how many cans of paint would have to be produced before the average cost per can dropped to \$10?