

Let's Go Home

Juan and Lori just bought a house that needs to be remodeled. They are going to paint and carpet some of the rooms. Since they are on a limited budget, Juan began checking the advertisements for sales.



Store	Paint Price
Home Handy	\$10 per gallon
Mix and Fix	Buy 3 gallons for \$13 each, get one free
Sanders	Buy 1 gallon for \$18; all additional gallons, 1/2 price

1. Complete the table below so Juan can compare prices for 1 through 10 gallons of paint.

No. of Gallons	1	2	3	4	5	6	7	8	9	10
Home Handy										
Mix and Fix										
Sanders										

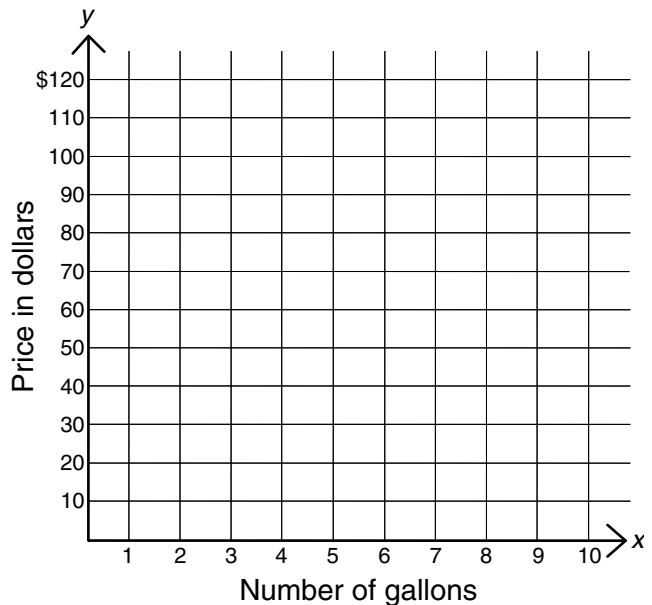
2. Where should Juan purchase the following amounts of paint?

- a) 3 gallons? _____
- b) 4 gallons? _____
- c) 10 gallons? _____

3. Let's make a graph of the paint prices.

- a) Use three different colors or marks to plot the three stores.
- b) Explain the pattern in the graphs.

- c) Which graph shows that you can buy 4 gallons for the same price as 3 gallons?



Let's Go Home—Continued

4. Use the floor plans in figure 1 on the next page to fill in the room dimensions below.

Room	Room Dimensions	Window Size	Door Size	Wall Area
Bedroom 2		one – 3' x 4'	one – 3' x 7'	
Dining Room		one – 9' x 5'	one – 9' x 7' one – 3' x 7'	
Master Bedroom		three – 3' x 4'	two – 3' x 7'	
Great Room		two – 7' x 5'	two – 6' x 7'	

5. Assume all the ceiling heights are 8 feet except the great room, which is 12' 4". Using the dimensions of the doors and windows from the chart, find the wall area of the rooms listed. Don't forget that the windows and doorways don't get painted. Closet doors do get painted.

6. a) What is the total area to be painted? _____
 b) If each gallon of paint covers 400 square feet, how many gallon cans of paint should be purchased?

 c) Which store would provide the best buy on the paint? _____
 d) How can you tell from the table in question 1? _____
 e) How can you tell from the graph? _____

7. a) If each room requires two coats of paint, how many total square feet will be painted?

 b) How many gallon cans of paint should be purchased? _____
 c) Where should the paint be purchased? _____
 d) On the average, which store has the best buy? _____
 Why? _____

When Lori went looking for carpet, she discovered that carpet is sold on rolls that are either 12 feet or 15 feet wide. She will need to consider which width to purchase to minimize waste.

8. Complete the chart below, filling in the information requested by the following questions:
 a) Fill in the width carpet that would be the best selection for the rooms that were painted.
 b) Fill in the length of carpet needed to cover each room.
 c) Lori made measurements in feet, but carpet is sold in square yards. Compute and fill in the square yardage needed.

Room	Room Dimensions	Carpet Roll Width	Length Needed	Square Yards Needed
Bedroom 2				
Dining Room				
Master Bedroom				
Great Room				

Let's Go Home—Continued

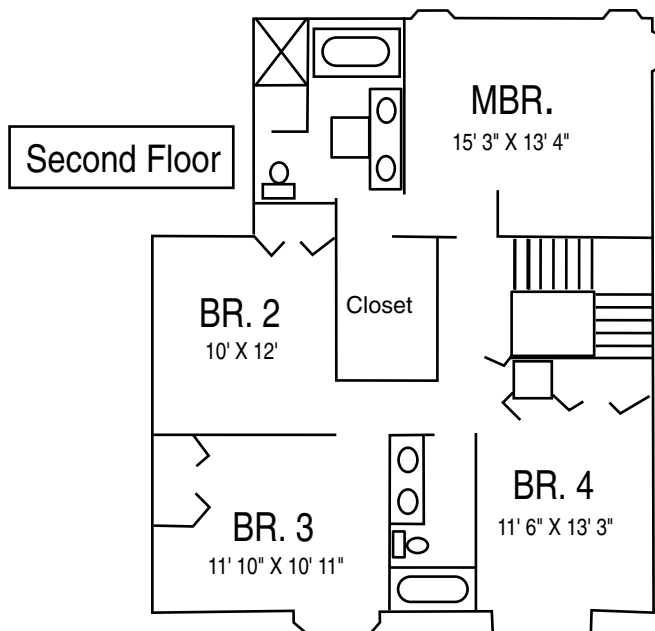
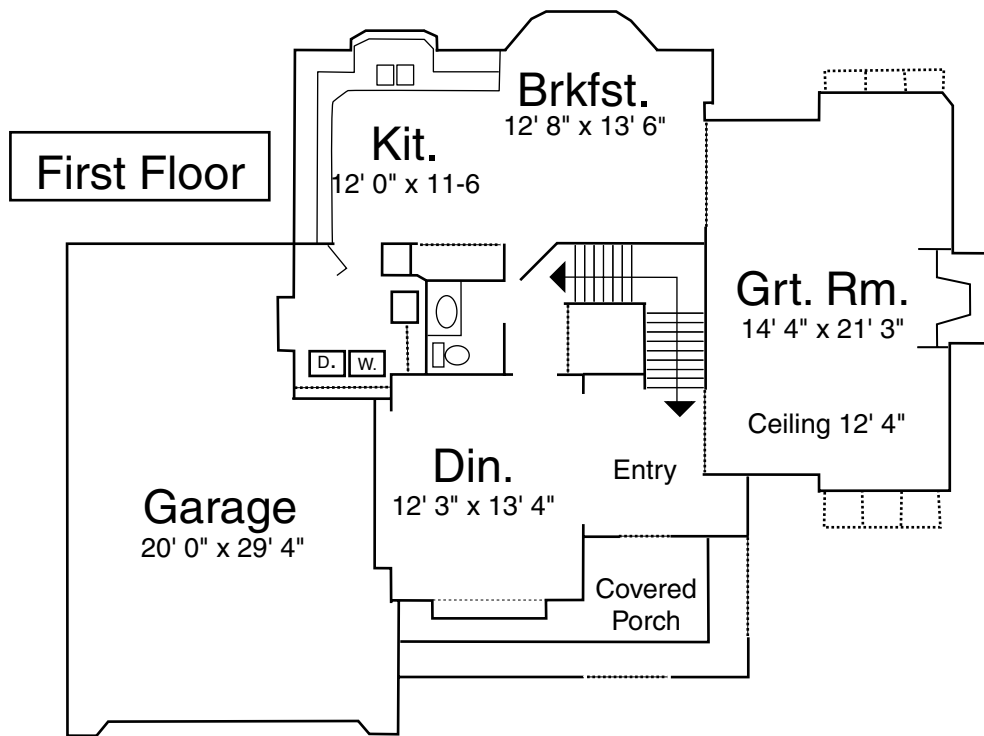


Fig. 1

Let's Go Home—*Continued*

9. Lori's budget for carpeting is \$2200. How much can she afford to pay per square yard?

10. Notice that the carpet will not exactly fit the rooms. The excess piece is called a remnant. What would the remnants look like? Draw and label the sizes of the remnants below.

11. Look at the floor plan in figure 1. Where might Lori be able to use the remnants most effectively?

12. a) Lori decides to use one of the carpet remnants in the entry hall as a runner. What are the dimensions of the largest runner she can make? _____

b) In order to avoid fraying, carpet remnants must be bound at a cost of \$1.50 per linear foot. How much will it cost to bind the hall runner? _____

c) If Lori spends \$20 per square yard for carpeting, can she bind the runner and still stay within her carpet budget of \$2200? _____

Explain how you determined your answer. _____

Can you ...

- find how many square yards of carpeting are wasted?
- find the cost to wallpaper instead of paint?
- find the cost to replace the kitchen floor with new linoleum?
- design your own home?

Did you know that ...

- there are standard sizes for many home-improvement items?
- there is a way to figure out average costs for certain home-improvement projects?
- rooms requiring plumbing are placed close together to save on cost?

Mathematical content

- Geometry, reading charts and graphs, scale drawings

Resources

- Advertisements from home-improvement stores
- House-plan magazines or books
- Local architects and building contractors