

1. Fill in the blanks:

a. $4:5 = \underline{24}:30$

b. $1:7 = 5:\underline{35}$

c. $\underline{3}:11 = 24:88$

d. $\underline{26}:32 = 13:16$

e. $\underline{40}:8 = 5:1$

f. $\underline{6}:5 = 18:15$

g. $12:13 = 36:\underline{39}$

h. $2:12 = \underline{10}:60$

2. The most common women's shoe size in the U.S. is reported to be an $8\frac{1}{2}$. A shoe store uses a table like the one below to decide how many pairs of size $8\frac{1}{2}$ shoes to buy when they place a shoe order from the shoe makers.

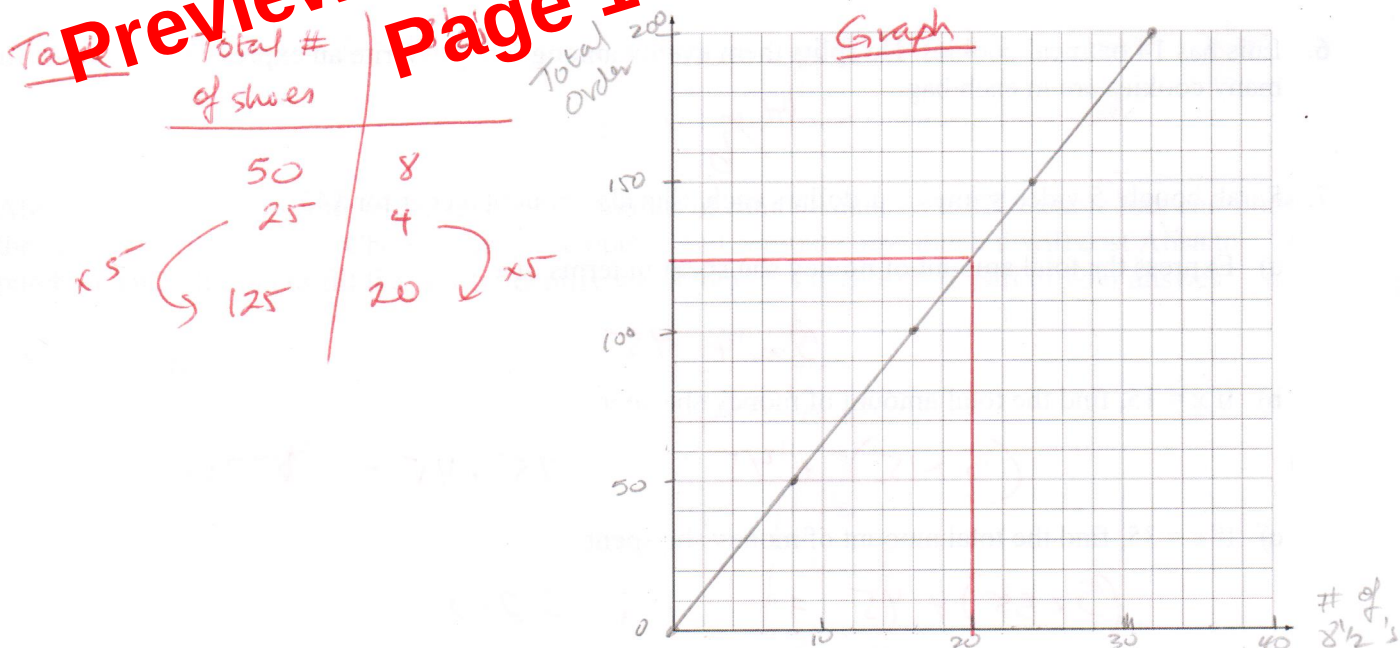
- a. What is the ratio of the number of pairs of size $8\frac{1}{2}$ shoes they order to the total number of pairs of shoes being ordered?

$$8:50 \approx \frac{8}{50}$$

$$4:25 \approx \frac{4}{25}$$

Total number of pairs of shoes being ordered	Number of pairs of size $8\frac{1}{2}$ to order
50	8
100	16
150	24
200	32

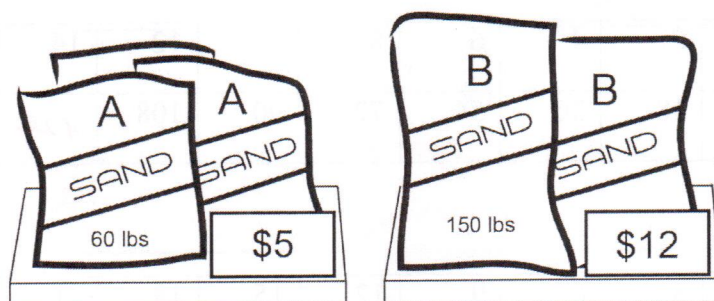
- b. Plot the values from the table on a coordinate plane, and draw a straight line through the points. Label the axes. Then use the graph to find the number of pairs of size $8\frac{1}{2}$ shoes they order for a total order of 125 pairs of shoes.



- c. If 125 total pairs of shoes are ordered, how many will be size $8\frac{1}{2}$? (Use the graph or the table of values to find the answer)

20 shoes will be size $8\frac{1}{2}$

8. Alisa hopes to play beach volleyball in the Olympics someday. She has convinced her parents to allow her to set up a beach volleyball court in their back yard. A standard beach volleyball court is approximately 26 feet by 52 feet. She figures that she will need the sand to be one foot deep. She goes to the hardware store to shop for sand and sees the following signs on pallets containing bags of sand.



- a. What is the rate that Brand A is selling for? Give the rate and then specify the unit rate.

$$\frac{\text{Pounds}}{\text{dollar}} = \frac{60}{5} = 12 \text{ lb per } \$$$

$$\text{Unit rate} = 12 \text{ lb per } \$$$

- b. Which brand is offering the better value? Explain your answer.

Brand B $\frac{\text{Pounds}}{\text{dollar}} = \frac{150}{12} = 12.5 \text{ lb per } \$$

Brand B is better value, you get more sand for each dollar you spend

- c. Alisa uses her cell phone to search how many pounds of sand is required to fill 1 cubic foot and finds the answer is 100 pounds. Choose one of the brands and compute how much it will cost Alisa to purchase enough sand to fill the court. Identify which brand was chosen as part of your answer.

Brand A

Weight lb	Cost \$
60	5
12	1
1 lb	$\frac{1}{12}$
100 lb	$8\frac{1}{3}$

A
\$8.33

Brand B

Weight lb	Cost \$
150	12
50	4
100	8

B
\$8.00