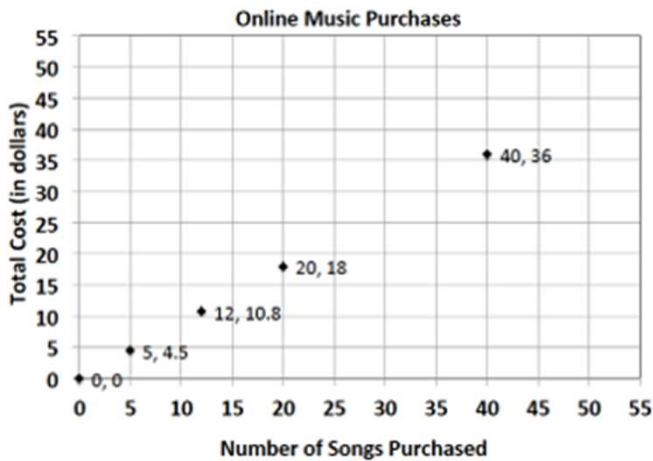


Proportion Worksheets (Equations)

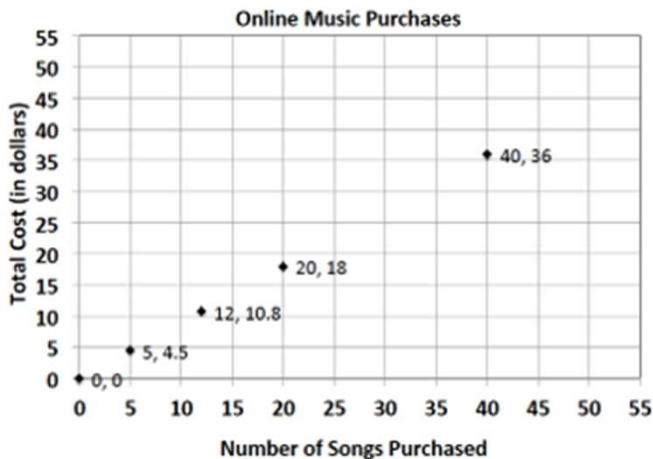
On average, Susan downloads 60 songs per month. An online music vendor sells package prices for songs that can be downloaded onto personal digital devices. The graph below shows the package prices for the most popular promotions. Susan wants to know if she should buy her music from this company or pay a flat fee of \$58.00 per month offered by another company. Which is the better buy



- Find the constant of proportionality for this situation.
- Write an equation to represent the relationship.
- Use your equation to find the answer to Susan's question above. Justify your answer with mathematical evidence and a written explanation.

Proportion Worksheets (Equations)

On average, Susan downloads 60 songs per month. An online music vendor sells package prices for songs that can be downloaded onto personal digital devices. The graph below shows the package prices for the most popular promotions. Susan wants to know if she should buy her music from this company or pay a flat fee of \$58.00 per month offered by another company. Which is the better buy



Number of Songs Purchased (S)	Total Cost (C)	Constant of Proportionality
40	36	$\frac{36}{40} = \frac{9}{10} = 0.9$
20	18	$\frac{18}{20} = \frac{9}{10} = 0.9$
12	10.80	$\frac{10.80}{12} = \frac{9}{10} = 0.9$
5	4.50	$\frac{4.50}{5} = \frac{9}{10} = 0.9$

- a) Find the constant of proportionality for this situation.

The constant of proportionality, k , is 0.9.

- b) Write an equation to represent the relationship.

$$C = 0.9S$$

- c) Use your equation to find the answer to Susan's question above. Justify your answer with mathematical evidence and a written explanation.

Compare the flat fee of \$58 per month to \$0.90 per song. If $C = 0.9S$ and we substitute S with 60 (the number of songs), then the result is $C = 0.9(60) = 54$. She would spend \$54 on songs if she bought 60 songs. If she maintains the same number of songs, the charge of \$0.90 per song would be cheaper than the flat fee of \$58 per month.

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