Problem Set

1. A radio station plays 12 songs each hour. They never stop for commercials, news, weather, or traffic reports.
   a. Write an expression describing how many songs are played by the radio station in H hours.
   b. How many songs will be played in an entire day (24 hours)?
   c. How long does it take the radio station to play 60 consecutive songs?

2. A ski area has a high-speed lift that can move 2,400 skiers to the top of the mountain each hour.
   a. Write an expression describing how many skiers can be lifted in H hours.
   b. How many skiers can be moved to the top of the mountain in 14 hours?
   c. How long will it take to move 3,600 skiers to the top of the mountain?

3. Polly writes a magazine column, for which she earns $35 per hour. Create a table of values that shows the relationship between the number of hours that Polly works, H, and the amount of money Polly earns in dollars, E.

   a. If you know how many hours Polly works, can you determine how much money she earned? Write the corresponding expression.
   b. Use your expression to determine how much Polly earned after working for $3\frac{1}{2}$ hours.
   c. If you know how much money Polly earned, can you determine how long she worked? Write the corresponding expression.
   d. Use your expression to determine how long Polly worked if she earned $52.50.

4. Mitchell delivers newspapers after school, for which he earns $\$0.09$ per paper. Create a table of values that shows the relationship between the number of papers that Mitchell delivers, P, and the amount of money Mitchell earns in dollars, E.

   a. If you know how many papers Mitchell delivered, can you determine how much money he earned? Write the corresponding expression.

   b. Use your expression to determine how much Mitchell earned by delivering 300 newspapers.

   c. If you know how much money Mitchell earned, can you determine how many papers he delivered? Write the corresponding expression.

   d. Use your expression to determine how many papers Mitchell delivered if he earned $\$58.50$ last week.

5. Randy is an art dealer who sells reproductions of famous paintings. Copies of the *Mona Lisa* sell for $\$475$.

   a. Last year Randy sold $\$9{,}975$ worth of *Mona Lisa* reproductions. How many did he sell?

   b. If Randy wants to increase his sales to at least $\$15{,}000$ this year, how many copies will he need to sell (without changing the price per painting)?