

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 .

| | |
|--|--|
| | |
| | |
| | |
| | |
| | |

- If you know how many papers Mitchell delivered, can you determine how much money he earned? Write the corresponding expression.
 - Use your expression to determine how much Mitchell earned by delivering 300 newspapers.
 - If you know how much money Mitchell earned, can you determine how many papers he delivered? Write the corresponding expression.
 - 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.
- Last year Randy sold \$9,975 worth of *Mona Lisa* reproductions. How many did he sell?
 - 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)?