# Lesson 7 Practice Problems

1. Decide whether each table could represent a proportional relationship. If the relationship could be proportional, what would the constant of proportionality be?

   a. How loud a sound is depending on how far away you are.

   | distance to listener (ft) | sound level (dB) |
   |:---:|:---:|
   | 5 | 85 |
   | 10 | 79 |
   | 20 | 73 |
   | 40 | 67 |

   b. The cost of fountain drinks at Hot Dog Hut.

   | volume (fluid ounces) | cost ($) |
   |:---:|:---:|
   | 16 | $1.49 |
   | 20 | $1.59 |
   | 30 | $1.89 |

2. A taxi service charges $1.00 for the first $\frac{1}{10}$ mile then $0.10 for each additional $\frac{1}{10}$ mile after that.

Fill in the table with the missing information then determine if this relationship between distance traveled and price of the trip is a proportional relationship.

| distance traveled (mi) | price (dollars) |
|---|---|
| $\frac{9}{10}$ | |
| 2 | |
| $3\frac{1}{10}$ | |
| 10 | |

3. A rabbit and turtle are in a race. Is the relationship between distance traveled and time proportional for either one? If so, write an equation that represents the relationship.

Turtle's run:

| distance (meters) | time (minutes) |
|---|---|
| 108 | 2 |
| 405 | 7.5 |
| 540 | 10 |
| 1,768.5 | 32.75 |

Rabbit's run:

| distance (meters) | time (minutes) |
|---|---|
| 800 | 1 |
| 900 | 5 |
| 1,107.5 | 20 |
| 1,524 | 32.5 |

4. For each table, answer: What is the constant of proportionality?

| a | b |
|---|---|
| 2 | 14 |
| 5 | 35 |
| 9 | 63 |
| $\frac{1}{3}$ | $\frac{7}{3}$ |

| a | b |
|---|---|
| 3 | 360 |
| 5 | 600 |
| 8 | 960 |
| 12 | 1440 |

| a | b |
|---|---|
| 75 | 3 |
| 200 | 8 |
| 1525 | 61 |
| 10 | 0.4 |

| a | b |
|---|---|
| 4 | 10 |
| 6 | 15 |
| 22 | 55 |
| 3 | $7\frac{1}{2}$ |

(From Unit 2, Lesson 2.)

5. Kiran and Mai are standing at one corner of a rectangular field of grass looking at the diagonally opposite corner. Kiran says that if the the field were twice as long and twice as wide, then it would be twice the distance to the far corner. Mai says that it would be more than twice as far, since the diagonal is even longer than the side lengths. Do you agree with either of them?

(From Unit 1, Lesson 4.)