

# Working With Speed 1

Name \_\_\_\_\_  
Period \_\_\_\_\_ Date \_\_\_\_\_

1. When John runs around the track on Monday, it takes him 8 minutes to run a distance of 1 kilometer (km). When he runs around the track Tuesday, it takes twice as long. Does John's speed increase or decrease on Tuesday?
2. Tina's bike rolled 500 centimeters (cm) in 2 seconds (s).  
Sam's bike rolled 275 cm in 1 s. Whose bike rolled on a steeper ramp?
3. A skateboarder peddled up a 2-km hill in 1 hour and rolled down the hill in 0.2 hours without stopping. What was his average speed?
  - a. going up the hill?
  - b. going clown the hill?
  - c. for the whole trip?
4. It took Mark 3 hours to push his bike 10 km uphill. After a leisurely 3-hour picnic at the park, he coasted back home in .5 hours.
  - a. How fast did Mark push uphill?
  - b. What was Mark's average speed while he was coasting?
5. Brenda's family drove 240 km to visit family at 80 km/h. They drove home at 60 km/h. What was their average driving speed for the time they were on the road?

6. Three boys raced their remote control cars for 50 meters on the sidewalk. Their times are in the table. What was the average speed at which each car traveled?

	$\Delta t(s)$	$d(m)$
Mathew	5	50
Joe	25	50
Eric	10	50

7. Jessica took off in a plane at 10:00 a.m. from Louisville and landed in Orlando, 1380 km away, at 5:30 p.m. There was a 1.5-hour layover in New Orleans.
  - a. What was Jessica's average speed on her trip from Louisville to Orlando?
  - b. What was the plane's average speed while in the air?

**Answer Key:**

1. Monday:  $v = \frac{1km}{8\text{ min}} = .125 \frac{km}{\text{min}}$       Tuesday:  $v = \frac{1km}{16\text{ min}} = .063$

John's speed decreases.

2. Tina:  $v = \frac{500cm}{2s} = 250 \frac{cm}{s}$       Sam:  $v = \frac{275cm}{1s} = 275 \frac{cm}{s}$

Sam's bike rolled on a steeper ramp.

3. a)  $v = \frac{2km}{1hr} = 2 \frac{km}{hr}$

b)  $v = \frac{2km}{.2hr} = 10 \frac{km}{hr}$

c)  $v = \frac{2km + 2km}{1hr + .2hr} = \frac{4km}{1.2hr} = 3.33 \frac{km}{hr}$

4. a)  $v = \frac{10km}{3hr} = 3.33 \frac{km}{hr}$

b)  $v = \frac{10km}{.5hr} = 20 \frac{km}{hr}$

5.  $t_1 = \frac{240km}{80 \frac{km}{hr}} = 3hr$        $t_2 = \frac{240km}{60 \frac{km}{hr}} = 4hr$

$$v = \frac{240km + 240km}{3hr + 4hr} = \frac{480km}{7hr} = 68.57 \frac{km}{hr}$$

6. Mathew:  $v = \frac{50m}{5s} = 10 \frac{m}{s}$       Joe:  $v = \frac{50m}{25s} = 2 \frac{m}{s}$       Eric:  $v = \frac{50m}{10s} = 5 \frac{m}{s}$

7. a)  $v = \frac{1380km}{7.5hr} = 184 \frac{km}{hr}$   
 $v = \frac{1380km}{6hr} = 230 \frac{km}{hr}$