

Week 12: Warm-up questions

Name:

1. Andy and Bernie live in the same apartment building and work at the same place. They both bike to work, taking the same route. Andy bikes at 15 miles per hour and Bernie bikes at 20 miles per hour. The time that it takes Andy to bike from his home to work is 0.2 hours longer than Bernie's time.
 - (a) How long does it take Andy to bike to work?
 - (b) How long does it take Bernie to bike to work?
 - (c) What is the distance between their apartment building and their workplace?

2. Consider Andy and Bernie from the previous problem. Suppose that Bernie leaves for work at 7am every morning.
 - (a) What time does Bernie arrive at work every morning?
 - (b) If Andy wants to arrive at work at the same time as Bernie does, what time does he have to leave home?

3. Mike and Nick both drove from Syracuse to Binghamton last weekend, along the same route. Mike's speed was 15 mph more than Nick's speed. The time that it took Mike to get from Syracuse to Binghamton was 1 hour and 15 minutes (or $1\frac{1}{4}$ hours). It took Nick 1 hour and 40 minutes (or $1\frac{2}{3}$ hours).
- (a) How fast was Mike driving?
 - (b) How fast was Nick driving?
 - (c) What is the distance between Syracuse and Binghamton along the route that they were taking?

4. Suppose that we have two equations in terms of two unknown variables a and b .

$$a + 2b = 10,$$

$$3a - 7b = 4.$$

Solve for a and b .

5. Suppose that we have two equations in terms of two unknown variables c and d .

$$2c + 3d = 12,$$

$$-2c + 3d = 6.$$

Solve for c and d .