Word Problems 5-9

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

1. Find two positive numbers that differ by 8 and whose reciprocals differ by 1/6.
2. Find two numbers whose sum is 25 and the sum of whose reciprocals is 1/6.
3. The reciprocal of half number is increased by half the reciprocal of the number is ½. Find the number.
4. The reciprocal of one third of a number decreased by one third of the reciprocal of the number is 1/3. Find the number
5. A town’s old street sweeper can clean the streets in 60 h. The old sweeper together with a new sweeper can clean the streets in 15 h. How long would it take the new sweeper to do the job alone?
6. The intake pipe can fill a certain tank in 6 h when the outlet pipe is closed, but with the outlet pipe open it takes 9 h. How long would it take the outlet pipe to empty a full tank?
7. During 60 mi of city driving, Jenna averaged 15 mi/gal. She then drove 140 mi on an expressway and averaged 25 mi/gal for the entire 200 mi. Find the average fuel consumption on the expressway.
8. Helped by a strong jet stream, a Los Angeles – to – Boston plane flew 10% faster than usual and made the 4400 km trip in 30 min less time than usual. At what speed does the plane usually fly?
9. The excursion boat Holiday travels 35 km upstream and then back again in 4 h 48 min. If the speed of the Holiday in still water is 15 km/h, what is the speed of the current?
10. Tim paddled his kayak 12 km upstream against a 3 km/h current and back again in 5 h 20 min. In that time how far could he have paddled in still water?
11. Members of the Computer Club were assessed equal amounts to raise $1200 to buy some software. When 8 new members joined, the per-member assessment was reduced by $7.50. What was the new size of the club?
12. To measure the speed of the jet stream, a weather plane left its base at noon and flew 800 km directly against the stream with an air speed of 750 km/h. It then returned directly to its base, arriving at 2:24 p.m. What was the speed of the jet stream?
13. Elvin drove halfway from Ashton to Dover at 40 mi/h and the rest of the way at 60 mi/h. What was his average speed for the whole trip? (Hint: Let the distance for the whole trip be, say, 100 mi)
14. Elizabeth drove the first half of a trip t 36 mi/h. At what speed should she cover the remaining half in order to average 45 mi/h for the whole trip? (Hint: Let the distance for the whole trip be, say, 100 mi)
15. A train averaged 120 km/h for the first two thirds of a trip and 100 km/h for the whole trip. Find its average speed for the last third of the trip.
16. Because of traffic Maria could average only 40 km/h for the first 20% of her trip, but she averaged 75 km/h for the whole trip. What was her average speed for the last 80% of her trip?
17. Pipe A can fill a tank in 5 h. Pipe B can fill it in 2 h less time than it takes pipe C, a drainpipe, to empty the tank. With all three pipes open, it takes 3 h to fill the tank. How long would it take pipe C to empty it?
18. An elevator went from the bottom to the top of a 240 m tower, remained there for 12 s, and returned to the bottom in an elapsed time of 2 min. If the elevator traveled 1 m/s faster on the way down, find its speed going up.

Answers

1. 4 and 12
2. 15 and 10
3. 5
4. 8
5. 20 h
6. 18 h
7. 35 mi/gal
8. 800 km/h
9. 2.5 km/h
10. 32 km
11. 40
12. 250 km/h
13. 48 mi/h
14. 60 mi/h
15. 75 km/h
16. 96 km/h
17. 5 h
18. 4 m/s