

Distance Problems - Extra Practice

1. Car A and Car B start from the same place at the same time and travel in the same direction. If Car A travels at 40 mph and Car B travels at 52 mph, in how many hours will they be 60 miles apart?
2. Two cyclists start in opposite directions from the same place, one at 6 mph and the other at 9 mph. How long will it take them to be 24 miles apart?
3. Two airplanes take off from Portland International Airport flying in opposite directions. The first plane flies at 340 mph and the second flies at 450 mph. How long will it take them to be 1185 miles apart? (Assume there is no wind)
4. Two cars leave from the same town at the same time traveling in the same direction. If one car travels at 60 mph and the other at 45 mph, how long will it take them to be 80 miles apart?
5. Two hikers start out on the Pacific Coast Trail at the same time and walk in the same direction. If one hiker averages 13.4 miles per day and the other averages 9.6 miles per day, in how many days will they be 49.4 miles apart?
6. Mr. Maxwell takes 1 hour to drive to work in the morning, but he takes $1\frac{1}{2}$ hours to return home over the same route during the evening rush. If his average morning speed is 10 mph faster than his average evening speed, how far is it from his home to his work?
7. Jennie drives to her son's house in 5 hours when there is heavy traffic. When there is no traffic the same trip takes only 4 hours. If she can drive an average of 10 mph faster when there is no traffic than when there is heavy traffic, how far is it to her son's house?
8. Bud occasionally has to drive to a construction site that is some distance from his office. If there is no traffic the trip takes 5 hours, but in heavy traffic it takes 6 hours. He can drive an average of 10 mph faster when there is no traffic than when there is heavy traffic. How far is it from his office to the construction site?

9. Mr. Robinson left San Diego at 7am heading towards Los Angeles. His neighbor, Mr. Reid, left at 8am, also heading to Los Angeles. By driving 9 mph faster, Mr. Reid overtook Mr. Robinson at noon. What was each person's speed, and how far had they driven when Mr. Reid caught up?
10. Mark leaves his house at 8am heading towards Steve's house. Brian leaves Mark's house at 9am, also heading to Steve's house. By bicycling 4 mph faster than Mark, Brian overtakes Mark at 3pm. What is the average speed of each person, and how far did each travel?
11. Lori hikes from her campsite to Green Lake to go swimming. She hiked at a rate of 3 mph going to the lake, and 2 mph coming back. The trip to the lake took 3 hours less than the trip back. How long did it take her to hike to the lake and what was the total distance she hiked?
12. Matthew drove from his home to a friend's house on Saturday. Because traffic was very light his average speed was 54 mph. He returned home the next day and his average speed was 48 mph. If his total driving time was 17 hours, how long did it take him to get to his friend's house on Saturday, and how far is it one way?
13. Brian bicycled from his home to a picnic area on Lake Travis, averaging 16 mph. On the return trip he averaged 24 mph. His total bicycling time was 5 hours. How long did it take him to get to the picnic area, and how far away from it does he live?
14. Leo hiked from his camp to a lookout point at the rate of 3 mph. On the trip back to camp he hiked at a rate of 4 mph. If he hiked for a total of 7 hours, how long did it take him to get to the point, and how far was it from his camp to the point?
15. Todd and Jo live 102 miles apart. Both leave their homes by bicycle, riding towards each other, and they meet 2 hours later. If Todd can cycle 5 mph faster than Jo what is the average speed of each?
16. Danny and Cathy live 60 miles apart. Both leave their homes at 10am by bicycle, riding towards each other, and meet at 2pm. If Danny's speed is two-thirds that of Cathy's speed, how fast does each cycle?

River Problems

17. A boat cruises downstream for 3 hours, turns around, and takes 4 hours to get back upstream to its starting point. If the speed of the stream is 3 mph, find the speed of the boat in still water.
18. A boat cruises downstream for 5 hours, turns around and takes 7 hours to get back to where it started. If the speed of the stream is 4 mph, find the speed of the boat in still water.
19. An airplane flies downwind from Abilene to Brownsville in 2 hours, and takes 3 hours to make the return trip against the wind. If the wind speed is 30 mph, find the speed of the plane in still air.
20. A boat cruised downstream for 4 hours, turned around and headed back upstream. After 5 more hours the boat was still 3 miles short of its starting point. If the speed of the stream was 3 mph, find the speed of the boat in still water.
21. A boat cruised downstream for 3 hours before heading back. After traveling 4 hours back upstream the boat was still 6 miles short of its starting point. If the speed of the water is 4 mph find the speed of the boat in still water, and how far downstream did it go before turning around?
22. A boat cruises downstream for 4 hours before heading back. After traveling 5 hours back upstream it is still 14 miles short of its starting point. If the speed of the boat in still water is 22 mph, find the speed of the stream.
23. The Wright family sails their houseboat upstream for 4 hours. After lunch they travel downstream for 2 hours. At that time they are still 12 miles away from the marina where they started out. If the speed of the houseboat in still water is 15 mph, what is the speed of the stream, and how far upstream did they travel before turning around?

Answers and Set-up Equations:

1. 5 hours $52x = 40x + 60$
2. $8/5$ hours $6x + 9x = 24$
3. $3/2$ hours $450x + 340x = 1185$
4. $5 \frac{1}{3}$ hours $60x = 45x + 80$
5. 13 days $13.4x = 9.6x + 49.4$
6. 30 miles $1(x + 10) = 1.5x$
7. 200 miles $5x = 4(x + 10)$
8. 300 miles $5(x + 10) = 6x$
9. 36 mph Mr. Robinson, 45 mph Mr. Reid, 180 miles each $5x = 4(x + 9)$
10. 24 mph Mark, 28 mph Brian, 168 miles each $7x = 6(x + 4)$
11. 6 hours to lake, 36 miles total $3(x - 3) = 2x$
12. 8 hours Sat, 432 miles $54x = 48(17 - x)$
13. 3 hours going, 48 miles $16x = 24(5 - x)$
14. 4 hours going, 12 miles $3x = 4(7 - x)$
15. 23 mph Jo, 28 mph Todd $2(x + 5) + 2x = 102$
16. 9 mph Cathy, 6 mph Danny $4x + 4(2/3 x) = 60$
17. 21 mph $3(b + 3) = 4(b - 3)$
18. 24 mph $5(b + 4) = 7(b - 4)$
19. 150 mph $2(p + 30) = 3(p - 30)$
20. 24 mph $4(b + 3) = 5(b - 3) + 3$
21. 22 mph, 78 miles downstream $3(b + 4) = 6 + 4(b - 4)$
22. 4 mph $4(22 + w) = 14 = 5(22 - w)$
23. 3 mph, 48 miles up $4(15 - x) = 12 + 2(15 + x)$