

9.10 Practice - Revenue and Distance

- 1) A merchant bought some pieces of silk for \$900. Had he bought 3 pieces more for the same money, he would have paid \$15 less for each piece. Find the number of pieces purchased.
- 2) A number of men subscribed a certain amount to make up a deficit of \$100 but 5 men failed to pay and thus increased the share of the others by \$1 each. Find the amount that each man paid.
- 3) A merchant bought a number of barrels of apples for \$120. He kept two barrels and sold the remainder at a profit of \$2 per barrel making a total profit of \$34. How many barrels did he originally buy?
- 4) A dealer bought a number of sheep for \$440. After 5 had died he sold the remainder at a profit of \$2 each making a profit of \$60 for the sheep. How many sheep did he originally purchase?
- 5) A man bought a number of articles at equal cost for \$500. He sold all but two for \$540 at a profit of \$5 for each item. How many articles did he buy?
- 6) A clothier bought a lot of suits for \$750. He sold all but 3 of them for \$864 making a profit of \$7 on each suit sold. How many suits did he buy?
- 7) A group of boys bought a boat for \$450. Five boys failed to pay their share, hence each remaining boys were compelled to pay \$4.50 more. How many boys were in the original group and how much had each agreed to pay?
- 8) The total expenses of a camping party were \$72. If there had been 3 fewer persons in the party, it would have cost each person \$2 more than it did. How many people were in the party and how much did it cost each one?
- 9) A factory tests the road performance of new model cars by driving them at two different rates of speed for at least 100 kilometers at each rate. The speed rates range from 50 to 70 km/hr in the lower range and from 70 to 90 km/hr in the higher range. A driver plans to test a car on an available speedway by driving it for 120 kilometers at a speed in the lower range and then driving 120 kilometers at a rate that is 20 km/hr faster. At what rates should he drive if he plans to complete the test in $3\frac{1}{2}$ hours?
- 10) A train traveled 240 kilometers at a certain speed. When the engine was replaced by an improved model, the speed was increased by 20 km/hr and the travel time for the trip was decreased by 1 hour. What was the rate of each engine?
- 11) The rate of the current in a stream is 3 km/hr. A man rowed upstream for 3 kilometers and then returned. The round trip required 1 hour and 20 minutes. How fast was he rowing?

- 12) A pilot flying at a constant rate against a headwind of 50 km/hr flew for 750 kilometers, then reversed direction and returned to his starting point. He completed the round trip in 8 hours. What was the speed of the plane?
- 13) Two drivers are testing the same model car at speeds that differ by 20 km/hr. The one driving at the slower rate drives 70 kilometers down a speedway and returns by the same route. The one driving at the faster rate drives 76 kilometers down the speedway and returns by the same route. Both drivers leave at the same time, and the faster car returns $\frac{1}{2}$ hour earlier than the slower car. At what rates were the cars driven?
- 14) An athlete plans to row upstream a distance of 2 kilometers and then return to his starting point in a total time of 2 hours and 20 minutes. If the rate of the current is 2 km/hr, how fast should he row?
- 15) An automobile goes to a place 72 miles away and then returns, the round trip occupying 9 hours. His speed in returning is 12 miles per hour faster than his speed in going. Find the rate of speed in both going and returning.
- 16) An automobile made a trip of 120 miles and then returned, the round trip occupying 7 hours. Returning, the rate was increased 10 miles an hour. Find the rate of each.
- 17) The rate of a stream is 3 miles an hour. If a crew rows downstream for a distance of 8 miles and then back again, the round trip occupying 5 hours, what is the rate of the crew in still water?
- 18) The railroad distance between two towns is 240 miles. If the speed of a train were increased 4 miles an hour, the trip would take 40 minutes less. What is the usual rate of the train?
- 19) By going 15 miles per hour faster, a train would have required 1 hour less to travel 180 miles. How fast did it travel?
- 20) Mr. Jones visits his grandmother who lives 100 miles away on a regular basis. Recently a new freeway has opened up and, although the freeway route is 120 miles, he can drive 20 mph faster on average and takes 30 minutes less time to make the trip. What is Mr. Jones rate on both the old route and on the freeway?
- 21) If a train had traveled 5 miles an hour faster, it would have needed $1\frac{1}{2}$ hours less time to travel 150 miles. Find the rate of the train.
- 22) A traveler having 18 miles to go, calculates that his usual rate would make him one-half hour late for an appointment; he finds that in order to arrive on time he must travel at a rate one-half mile an hour faster. What is his usual rate?



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Answers - Revenue and Distance

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| 1) 12 | 9) 60 mph, 80 mph | 17) $r = 5$ |
| 2) \$4 | 10) 60, 80 | 18) 36 mph |
| 3) 24 | 11) 6 km/hr | 19) 45 mph |
| 4) 55 | 12) 200 km/hr | 20) 40 mph, 60 mph |
| 5) 20 | 13) 56, 76 | 21) 20 mph |
| 6) 30 | 14) 3.033 km/hr | 22) 4 mph |
| 7) 25 @ \$18 | 15) 12 mph, 24 mph | |
| 8) 12 @ \$6 | 16) 30 mph, 40 mph | |



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