

Distance – Speed – Time Problems

- 1) An aircraft carrier made a trip to Guam and back. The trip there took three hours and the trip back took four hours. It averaged 6km/h on the return trip. Find the average speed of the trip there. **Answer: 8 km/h**
- 2) A passenger plane made a trip to Las Vegas and back. On the trip there it flew 432 mph and on the return trip it went 480 mph. How long did the trip there take if the return trip took nine hours?
Answer: 10 hours
- 3) A cattle train left Miami and travelled toward New York. 14 hours later, a diesel train left Miami travelling at 45 km/h in an effort to catch up with the cattle train. After travelling for four hours, the diesel train finally caught up. What was the cattle train's average speed?
Answer: 12.89 km/h
- 4) Jose left the White House and drove toward the recycling plant at an average speed of 40km/h. Rob left some time later driving in the same direction at an average speed of 48km/h. After driving for five hours Rob caught up with Jose. How long had Jose driven before Rob caught up?
Answer: 6 hours
- 5) A cargo plane flew to the maintenance facility and back. It took one hour less time to get there than it did to get back. The average speed on the trip there was 220 mph. The average speed on the way back was 200 mph. How many hours did the trip there take?
Answer: 10 hours
- 6) Kali left school and travelled toward her friend's house at an average speed of 40km/h. Matt left one hour later and travelled in the opposite direction at an average speed of 50 km/h. Find the number of hours Matt had travelled when they were 400 km apart.
Answer: 4 hours
- 7) Ryan left the science museum and drove south. Gabriella left three hours later driving 42 km/h faster in an effort to catch up with him. After two hours Gabriella finally caught up. Find Ryan's average speed.
Answer: 28 km/h
- 8) A submarine left Hawaii two hours before an aircraft carrier. The vessels traveled in opposite directions. The aircraft carrier travelled at 25 mph for nine hours. After this time the vessels were 280 miles apart. Find the submarine's speed.
Answer: 5 mph
- 9) Chelsea left the White House and travelled toward the capital at an average speed of 34 km/h. Jasmine left at the same time and traveled in the opposite direction at an average speed of 65 km/h. Find the number of hours Jasmine had travelled when they were 59.4 km apart.
Answer: 0.6 hours
- 10) Joseph left the airport and travelled toward the mountains. Kayla left 2.1 hours later travelling 35 mph faster in an effort to catch up with him. After 1.2 hours Kayla finally caught up. Find Jose's average speed.
Answer: 20 mph

Mixtures Problems

- 1) 2 m³ of soil containing 35% sand was mixed into 6 m³ of soil containing 15% sand. How much sand did the mixture contain?
Answer: 20%
- 2) 9 lbs. of mixed nuts containing 55% peanuts were mixed with 6 lbs. of another kind of mixed nuts that contain 40% peanuts. What percentage of the new mixture was peanuts?
Answer: 49%
- 3) 5 fl. oz. of a 2% alcohol solution was mixed with 11 fl. oz. of a 66% alcohol solution. Find the concentration of the new mixture.
Answer: 46%
- 4) 16 lb of Brand M cinnamon was made by combining 12 lb of Indonesian cinnamon, which costs \$19/lb, with 4 lb of Thai cinnamon, which costs \$11/lb. Find the cost per lb of the mixture.
Answer: \$17/lb
- 5) Emily mixed together 9 gal. of Brand A fruit drink and 8 gal. of Brand B fruit drink which contains 48% fruit juice. Find the percentage of fruit juice in Brand A if the mixture contained 30% fruit juice.
Answer: 14%
- 6) How many mg of a metal containing 45% nickel must be combined with 6 mg of pure nickel to form an alloy containing 78% nickel?
Answer: 4 mg
- 7) 7 L of an acid solution was mixed with 3 L of a 15% acid solution to make a 29% acid solution. Find the percent concentration of the first solution.
Answer: 35%
- 8) 9 gal. of a sugar solution was mixed with 6 gal. of a 90% sugar solution to make an 84% sugar solution. Find the percent concentration of the first solution.
Answer: 80%
- 9) A metallurgist needs to make 12.4 lb. of an alloy containing 50% gold. He is going to melt and combine one metal that is 60% gold with another metal that is 40% gold. How much of each should he use?
Answer: 6.0 lb. of 60% gold, 6.4 lb. of 40% gold
- 10) Brand X sells 21 oz. bags of mixed nuts that contain 29% peanuts. To make their product they combine Brand A mixed nuts, which contain 35% peanuts, and Brand B mixed nuts, which contain 25% peanuts. How much of each do they need to use?
Answer: 8.4 oz. of Brand A, 12.6 oz. of Brand B

Work Problems

Solve each question. Round your answer to the nearest hundredth.

- 1) Working alone, Ryan can dig a 10 ft by 10 ft hole in five hours. Castel can dig the same hole in six hours. How long would it take them if they worked together?
Answer: 2.73 hours
- 2) Shawna can pour a large concrete driveway in six hours. Dan can pour the same driveway in seven hours. Find how long it would take them if they worked together.
Answer: 3.23 hours
- 3) It takes Trevon ten hours to clean an attic. Cody can clean the same attic in seven hours. Find how long it would take them if they worked together.
Answer: 4.12 hours
- 4) Working alone, Carlos can oil the lanes in a bowling alley in five hours. Jenny can oil the same lanes in nine hours. If they worked together how long would it take them?
Answer: 3.21 hours
- 5) Working together, Paul and Daniel can pick forty bushels of apples in 4.95 hours. If Daniel had he done it alone it would have taken him 9 hours. Find how long it would take Paul to do it alone.
Answer: 11 hours
- 6) Working together, Jenny and Natalie can mop a warehouse in 5.14 hours. If Natalie had done it alone it would have taken her 12 hours. How long would it take Jenny to do it alone?
Answer: 8.99 hours
- 7) Rob can tar a roof in nine hours. One day his friend Kayla helped him and it only took 4.74 hours. How long would it take Kayla to do it alone?
Answer: 10.01 hours
- 8) Working alone, it takes Kristin 11 hours to harvest a field. Kayla can harvest the same field in 16 hours. Find how long it would take them if they worked together.
Answer: 6.52 hours
- 9) Krystal can wax a floor in 16 minutes. One day her friend Perry helped her and it only took 5.76 minutes. How long would it take Perry to do it alone?
Answer: 9 minutes
- 10) Working alone, Dan can sweep a porch in 15 minutes. Albert can sweep the same porch in 11 minutes. If they worked together how long would it take them?
Answer: 6.35 minutes
- 11) Ryan can paint a fence in ten hours. Asanji can paint the same fence in eight hours. If they worked together how long would it take them?
Answer: 4.44 hours
- 12) Working alone, it takes Kevin eight hours to dig a 10 ft by 10 ft hole. Brenda can dig the same hole in nine hours. How long would it take them if they worked together?
Answer: 4.24 hours