

Unit 5: Real World Applications
Post Test – Version A

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

1. It takes Perry eight hours to pick forty bushels of apples. Natalie can pick the same amount in ten hours. Find how long it would take them if they worked together.

2. Working alone, Scott can pick forty bushels of apples in 9 hours. One day his friend Jose helped him and it only took 5.14 hours. Find how long it would take Jose to do it alone.

3. A freight train and a passenger train left Washington at the same time. The trains traveled in opposite directions. The passenger train traveled 30 mph faster than the freight train. After 19 hours they were 1330 miles apart. Find the freight train's speed.

4. Chelsea left Scott's house and traveled toward the lake. Lisa left three hours later traveling at 75 mph in an effort to catch up to Chelsea. After traveling for two hours Lisa finally caught up. Find Chelsea's average speed.

5. Lisa wants to make 10 gallons of a 55% saline solution by mixing together an 85% saline solution and a 35% saline solution. How much of each solution must she use?

6. Kim wants to make 15 gallons of a 47% alcohol solution by mixing together a 35% alcohol solution and an 80% alcohol solution. How much of each solution must she use?

7. Find the value of two numbers if their sum is 19 and their difference is 3.

8. Krystal and Willie are selling cheesecakes for a school fundraiser. Customers can buy New York style cheesecakes and apple cheesecakes. Krystal sold 14 New York style cheesecakes and 4 apple cheesecakes for a total of \$300. Willie sold 13 New York style cheesecakes and 5 apple cheesecakes for a total of \$303. Find the cost of each of one New York style cheesecake and one apple cheesecake.

9. Daniel and Denise each improved their yards by planting daylilies and shrubs. They bought their supplies from the same store. Daniel spent \$89 on 6 daylilies and 11 shrubs. Denise spent \$91 on 7 daylilies and 11 shrubs. Find the cost of one daylily and the cost of one shrub.

10. The school that James goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 8 adult tickets and 3 child tickets for a total of \$79. The school took in \$98 on the second day by selling 4 adult tickets and 6 child tickets. What is the price of each of one adult ticket and one child ticket?

11. The state fair is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 4 vans and 14 buses with 582 students. High School B rented and filled 2 vans and 14 buses with 564 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

12. Traveling with the current a certain boat went 15 km/h. Against the same current it only went 1 km/h. Find the speed of the boat in still water and the speed of the current.

13. A plane traveled 1080 kilometers each way to Seattle and back. The trip there was with the wind. It took 10 hours. The trip back was into the wind. The trip back took 20 hours. Find the speed of the plane in still air and the speed of the wind.

14. Jennifer bought 7 shirts for a total of \$47. Tee shirts cost \$7 and long sleeve shirts cost \$6. How many of each type of shirt did she buy?

15. Wilbur's Printing Inc. has two types of printing presses: Model A and Model B. Model A can print 60 books per day and Model B can print 75 books per day. Altogether Wilbur has 15 printing presses. If he can print 975 books in a day, then how many of each press does he have?

Unit 5: Real World Applications
Post Test – Version B

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

1. It takes Adam nine hours to pick forty bushels of apples. Destiny can pick the same amount in 15 hours. How long would it take them if they worked together?

2. Abraham can pick forty bushels of apples in 11 hours. One day her friend Jessica helped her and it only took 5.74 hours. How long would it take Jessica to do it alone?

3. James left Perry's house traveling toward the capital three hours before Kaiden. Kaiden traveled in the opposite direction going 10 km/h faster than James for one hour after which time they were 110 km apart. How fast did James travel?

4. Castel left the White House and drove toward the lake at an average speed of 30 km/h. Ted left one hour later and drove in the same direction but with an average speed of 40 km/h. How long did Castel drive before Ted caught up?

5. Farmer John's Produce Stand sells 16 lbs. bags of mixed nuts that contain 46% peanuts. To make her product she combines Brand A mixed nuts which contains 26% peanuts and Brand B mixed nuts which contain 58% peanuts. How much of each does she need to use?

6. DeShawn wants to make 10 fl. oz. of a 76% saline solution by mixing together a 20% saline solution and a 90% saline solution. How much of each solution must he use?

7. The sum of two numbers is 20. Their difference is 2. Find the numbers.

8. Kayla and Abraham are selling wrapping paper for a school fundraiser. Customers can buy rolls of plain wrapping paper and rolls of holiday wrapping paper. Kayla sold 7 rolls of plain wrapping paper and 9 rolls of holiday wrapping paper for a total of \$127. Abraham sold 9 rolls of plain wrapping paper and 8 rolls of holiday wrapping paper for a total of \$124. What is the cost of each of one roll of plain wrapping paper and one roll of holiday wrapping paper?

9. Kim and Angie each improved their yards by planting daylilies and shrubs. They bought their supplies from the same store. Kim spent \$174 on 12 daylilies and 6 shrubs. Angie spent \$37 on 1 daylily and 3 shrubs. Find the cost of one daylily and the cost of one shrub.

10. Carlos' school is selling tickets to a spring musical. On the first day of ticket sales the school sold 8 senior citizen tickets and 4 child tickets for a total of \$124. The school took in \$159 on the second day by selling 9 senior citizen tickets and 6 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

11. The senior classes at High School A and High School B planned separate trips to the water park. The senior class at High School A rented and filled 4 vans and 6 buses with 212 students. High School B rented and filled 4 vans and 10 buses with 332 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

12. Flying with the wind a plane went 276 km/h. Flying into the same wind the plane only went 252 km/h. Find the speed of the wind and the speed of the plane in still air.

13. A plane traveled 1144 miles each way to Toronto and back. The trip there was with the wind. It took 13 hours. The trip back was into the wind. The trip back took 26 hours. What is the speed of the plane in still air? What is the speed of the wind?

14. Heather bought 9 eating utensils for a total of \$33. Spoons cost \$5 and forks cost \$3. How many of each eating utensil did she buy?

15. Jenny's Printing Inc. has two types of printing presses: Model A and Model B. Model A can print 50 books per day and Model B can print 60 books per day. Altogether Jenny has 13 printing presses. If she can print 750 books in a day, then how many of each press does she have?

Unit 5: Real World Applications
Post Test – Version C

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

1. Amanda can inflate twenty balloons in 13 minutes. Kathryn can inflate the same twenty balloons in 15 minutes. Find how long it would take them if they worked together.

2. Working alone, DeShawn can mop a warehouse in nine hours. One day his friend Jasmine helped him and it only took 4.24 hours. How long would it take Jasmine to do it alone?

3. A container ship left Diego Garcia and traveled toward St. Vincent at an average speed of 15 km/h. Sometime later a cruise ship left traveling in the opposite direction with an average speed of 25 km/h. After the container ship had traveled for nine hours the ships were 360 km apart. Find the number of hours the cruise ship traveled.

4. A cargo plane left Los Angeles and flew north. A passenger plane left one hour later flying 58 km/h faster in an effort to catch up to it. After four hours the passenger plane finally caught up. What was the cargo plane's average speed?

5. A metallurgist needs to make 16 kg of an alloy containing 55% platinum. He is going to melt and combine one metal that is 20% platinum with pure platinum. How much of each should he use?

6. Norma wants to make 18 L of a 40% saline solution by mixing together an 84% saline solution and a 12% saline solution. How much of each solution must she use?

7. Find the value of two numbers if their sum is 19 and their difference is 3.

8. Kim and Trevon are selling pies for a school fundraiser. Customers can buy cherry pies and pumpkin pies. Kim sold 1 cherry pie and 8 pumpkin pies for a total of \$168. Trevon sold 1 cherry pie and 7 pumpkin pies for a total of \$148. What is the cost for each of one cherry pie and one pumpkin pie?

9. Ashley and Matthew each improved their yards by planting hostas and ornamental grass. They bought their supplies from the same store. Ashley spent \$68 on 10 hostas and 6 bunches of ornamental grass. Matthew spent \$64 on 11 hostas and 3 bunches of ornamental grass. Find the cost of one hosta and the cost of one bunch of ornamental grass.

10. Rose's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 8 senior citizen tickets and 5 child tickets for a total of \$169. The school took in \$234 on the second day by selling 10 senior citizen tickets and 8 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

11. The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 7 vans and 11 buses with 360 students. High School B rented and filled 6 vans and 3 buses with 135 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

12. Going down the river a boat went 27 mph. Going up the river it only went 1 mph. What is the speed of the current? How fast would the boat go if there were no current?

13. A plane traveled 1104 kilometers each way to Havana and back. The trip there was with the wind. It took 6 hours. The trip back was into the wind. The trip back took 8 hours. Find the speed of the plane in still air and the speed of the wind.

14. Julio spent \$380 on pair of pants. Dress pants cost \$80 and jeans cost \$30. If he bought a total of 6, then how many of each kind did he buy?

15. Jack's Printing Inc. has two types of printing presses: Model A and Model B. Model A can print 50 books per day and Model B can print 45 books per day. Altogether Jack has 10 printing presses. If he can print 470 books in a day, then how many of each press does he have?