

**Student:** yaser almohaws  
**Date:** 1/1/15  
**Time:** 11:14 AM

**Instructor:** fahad aljabr  
**Course:** MATH-001: Fundamentals of Exercises  
Math 11415  
**Book:** Bittinger: Introductory and  
Intermediate Algebra, 4e

**Assignment:** Week 10 Practice

1. In 2009, a diabetic express company charged \$38.85 for a vial of type A insulin and \$30.34 for a vial of type B insulin. If a total of \$1704.22 was collected for 50 vials of insulin, how many vials of each type were sold?

The number of vials of type A insulin sold were 22 and the number of vials of type B insulin sold were 28 .

2. A disc jockey must play 12 commercial spots during 1 hour of a radio show. Each commercial is either 30 seconds or 60 seconds long. If the total commercial time during 1 hour is 8 min, how many 30-second commercials were played that hour? How many 60-second commercials?

How many 30-second commercials were played that hour?

8

How many 60-second commercials were played that hour?

4

3. Soybean meal is 14% protein; cornmeal is 7% protein. How many pounds of each should be mixed together in order to get 280-lb mixture that is 9% protein?

How many pounds of the cornmeal should be in the mixture?

200 pounds

How many pounds of the soybean meal should be in the mixture?

80 pounds

4. \$5900 is invested, part of it at 11% and part of it at 9%. For a certain year, the total yield is \$ 593.00. How much was invested at each rate?

How much was invested at 11% ? \$ 3100

How much was invested at 9% ? \$ 2800

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5. A student makes a \$ 9.75 purchase at the bookstore with a \$20 bill. The store has no bills and gives the change in quarters and fifty-cent pieces. There are 30 coins in all. How many of each kind are there?

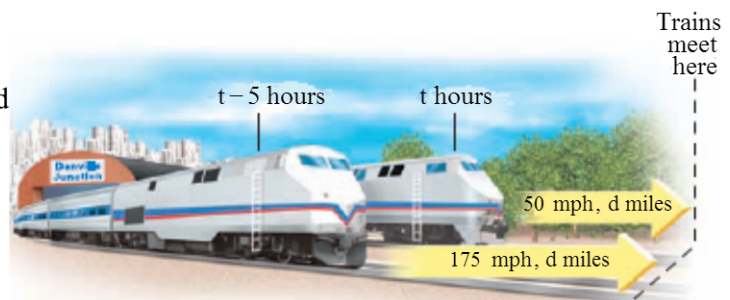
How many quarters are there in the change?

19

How many fifty-cent pieces are there in the change?

11

6. A train leaves a station and travels north at a speed of 50 mph. Five hours later, a second train leaves on a parallel track and travels north at 175 mph. How far from the station will they meet?



The trains will meet 350 miles away from the station.

(Type an integer or a decimal.)

7. Alvin paddled for 2 hours with a 5-km/h current to reach a campsite. The return trip against the same current took 7 hours.

Find the speed of the boat in still water.

What is the speed of the boat in still water?

9 km/h

8. A car travels from one town to another at a speed of 42 mph. If it had gone 14 mph faster, it could have made the trip in a half hour less time. How far apart are the towns?

The answer is 84 mi.

9. Solve this system of equations.

$$\begin{aligned}5x + 3y + z &= -3 \\x - 3y + 2z &= 12 \\14x - 2y + 3z &= 13\end{aligned}$$

Write the solution as an ordered triple.

(0, -2, 3)

10. Solve this system of equations.

$$\begin{aligned}5x + 3y + z &= -1 \\x - 3y + 2z &= -2 \\14x - 2y + 3z &= 7\end{aligned}$$

Write the solution as an ordered triple.

(1, -1, -3)

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11. Solve the following system of equations.

$$\begin{aligned}6x - y - z &= 6 \\3x + y + z &= -3 \\9x - 3y - 2z &= 9\end{aligned}$$

The triple  $\left(\frac{1}{3}, 2, -6\right)$  is the solution.

(Simplify your answers. Type integers or simplified fractions.)

12. Solve.

$$\begin{aligned}x + y + z &= 85 & (1) \\-2x + 5y &= 92 & (2) \\x - z &= -9 & (3)\end{aligned}$$

Thus, the triple  $(24, 28, 33)$  is the solution.

13. Solve this system of equations.

$$\begin{aligned}4a + 7b &= -7 \\8a - 2c &= -2 \\6b - 2c &= -8\end{aligned}$$

The solution is  $(0, -1, 1)$ .

14. Many high school students take a certain test. Beginning in March 2005, students taking the test received three scores: a critical reading score, a mathematics score, and a writing score. The average total score of 2007 high school seniors who took the test was 1510. The average mathematics score exceeded the reading score by 13 points and the average writing score was 9 points less than the reading score. What was the average score for each category?

The average reading score was 502.

The average mathematics score was 515.

The average writing score was 493.

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15. The basic model of a particular car (2WD) with a power sunroof costs \$28,315. When equipped with four-wheel drive (4WD) and a sunroof, the vehicle's price rose to \$30,985. The cost of the basic model with 4WD was \$30,085. Find the basic price, the cost of 4WD, and the cost of a sunroof.

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The basic price of the vehicle is \$ 27415 .

The cost of 4WD is \$ 2670 .

The cost of sunroof is \$ 900 .

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16. An investment of \$68,000 was made by a business club. The investment was split into three parts and lasted for one year. The first part of the investment earned 8% interest, the second 6%, and the third 9%. Total interest from the investments was \$5400. The interest from the first investment was 4 times the interest from the second. Find the amounts of the three parts of the investment.

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What is the amount of the first part of the investment? \$ 36000

What is the amount of the second part of the investment? \$ 12000

What is the amount of the third part of the investment? \$ 20000

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17. A dietician works in a hospital and prepares meals under the guidance of a physician. Suppose that for a particular patient, a physician prescribes a meal to have 600 calories, 40 g of protein, and 240 mg of vitamin C. The dietician decides to prepare the meal using steak (each 3-oz serving contains 300 Cal, 20 g of protein, and no vitamin C), baked potatoes (one baked potato contains 100 Cal, 5 g of protein, and 20 mg of vitamin C), and Brussels sprouts (one 156-g serving contains 50 Cal, 5 g of protein, and 100 mg of vitamin C). How many servings of each food are required to satisfy the physician's requirements?

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How many servings of steak are required? 1

How many baked potatoes are required? 2

How many servings of Brussels sprouts are required? 2