

Chapter 6 System Word Problems (Day Two)

how all your work.

Part 1

1. The local amusement park is a popular field trip destination. This year the senior class at High School A and senior class at High School B both planned trips there. The senior class at High School A rented and filled 16 vans and 8 buses with 752 students. High School B rented and filled 5 vans and 5 buses with 380 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?
2. Molly is 4 years younger than Heidi. In 3 years Heidi will be twice as old as Molly. How old are they now?
3. Eight oranges and six pears cost \$2.90. Four oranges and nine pears cost \$2.83. Find the cost of an orange and the cost of a pear?
4. There are 41 pigs and chickens on a farm. There are 100 legs counted altogether, how many of each animal are there?
5. A rectangle has a perimeter of 94 inches. The length is two more than 4 times the width. Find the length and the width.

Part 2

6. An airplane flew for 6 hours with a tail wind of 50 km/hr. The return flight against the same wind took 8 hours. Find the speed of the airplane in still air.

7. A car leaves a city with a speed of 90 mph. Three hours later and out of the same city another car in pursuit of the first leaves with a speed of 120 mph. Find the time it takes for the second car to reach the first.

8. Two cities, A and B are located on the same east-west highway, 180 miles from each other. At 9 am, a car leaves each city, both travelling east. The car that leaves City A travels at 90 mph, and the car that leaves City B travels at 60 mph. Find the time it takes for Car A to reach Car B.

9. Alan has challenged Sam to a duel with water pistols at 50 feet. They start walking in opposite directions. Alan walks at 2 feet per second. Sam runs at 6 feet per second. How long will it take them to be 50 feet apart?

10. Airline fares for a flight from Elmwood to Palmdale are \$85 for first class and \$60 for coach class. On Friday, 79 passengers paid a total of \$5290 to fly from Elmwood to Palmdale. How many of each type of ticket were sold?

11. The sum of the digits of a two-digit number is 9. If the digits are reversed, the new number is 27 less than the original. Find the original number.

12. A jar of nickels and dimes contains \$5.45. There are 8 more dimes than nickels. How many of each are there?

Key

Chapter 6 System Word Problems Study Guide

how all your work.

Part 1

- 1. The local amusement park is a popular field trip destination. This year the senior class at High School A and senior class at High School B both planned trips there. The senior class at High School A rented and filled 16 vans and 8 buses with 752 students. High School B rented and filled 5 vans and 5 buses with 380 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?

A van holds 18 students and a bus holds 58 students.

$$\begin{array}{l} 16v + 8b = 752 \\ 5v + 5b = 380 \end{array}$$

- 2. Molly is 4 years younger than Heidi. In 3 years Heidi will be twice as old as Molly. How old are they now?

Molly is 1 year old and Heidi is 5 years old.

$$\begin{array}{l} m = H - 4 \\ H + 3 = 2(m + 3) \end{array}$$

- 3. Eight oranges and six pears cost \$2.90. Four oranges and nine pears cost \$2.83. Find the cost of an orange and the cost of a pear?

Each pear costs 23¢ and each orange costs 17¢.

$$\begin{array}{l} 8o + 6p = 2.90 \\ 4o + 9p = 2.83 \end{array}$$

- 4. There are 41 pigs and chickens on a farm. There are 100 legs counted altogether, how many of each animal are there?

There are 9 pigs & 32 chickens

$$\begin{array}{l} p + c = 41 \\ 4p + 2c = 100 \end{array}$$

- 5. A rectangle has a perimeter of 94 inches. The length is two more than 4 times the width. Find the length and the width.

The width is 9 inches and the length is 38 inches.

$$\begin{array}{l} 94 = 2l + 2w \\ l = 4w + 2 \end{array}$$

Part 2

- 6. An airplane flew for 6 hours with a tail wind of 50 km/hr. The return flight against the same wind took 8 hours. Find the speed of the airplane in still air.

The speed of the airplane in still air is 350 km/hr.

7. A car leaves a city with a speed of 90 mph. Three hours later and out of the same city another car in pursuit of the first leaves with a speed of 120 mph. Find the time it takes for the second car to reach the first.

The second car will take 9 hours to reach the first car.

8. Two cities, A and B are located on the same east-west highway, 180 miles from each other. At 9 am, a car leaves each city, both travelling east. The car that leaves City A travels at 90 mph, and the car that leaves City B travels at 60 mph. Find the time it takes for Car A to reach Car B.

Car A will reach car B in 6 hours.

9. Alan has challenged Sam to a duel with water pistols at 50 feet. They start walking in opposite directions. Alan walks at 2 feet per second. Sam runs at 6 feet per second. How long will it take them to be 50 feet apart?

It will take them $6\frac{1}{4}$ seconds to be 50 feet apart.

10. Airline fares for a flight from Elmwood to Palmdale are \$85 for first class and \$60 for coach class. On Friday, 79 passengers paid a total of \$5290 to fly from Elmwood to Palmdale. How many of each type of ticket were sold?

There are 22 first class tickets / $85f + 60c = 5,290$
 & 57 coach tickets. / $f + c = 79$

11. The sum of the digits of a two-digit number is 9. If the digits are reversed, the new number is 27 less than the original. Find the original number.

The original number is 63.

$$\begin{array}{l} x + y = 9 \\ 10y + x = 10x + y - 27 \end{array}$$

12. A jar of nickels and dimes contains \$5.45. There are 8 more dimes than nickels. How many of each are there?

There are 39 dimes and 31 nickles.

$$\begin{array}{l} n + 8 = d \\ .05n + .10d = 5.45 \end{array}$$

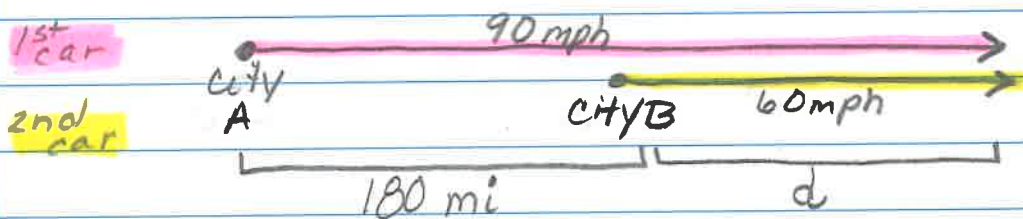
	d	r	t	Equation
Going	d	$r+50$	6	$d=(r+50)6$
Return	d	$r-50$	8	$d=(r-50)8$

	d	r	t	Equation
1 st car	d	90	$t+3$	$d=90(t+3)$
2 nd car	d	120	<u>t</u>	$d=120t$

OR

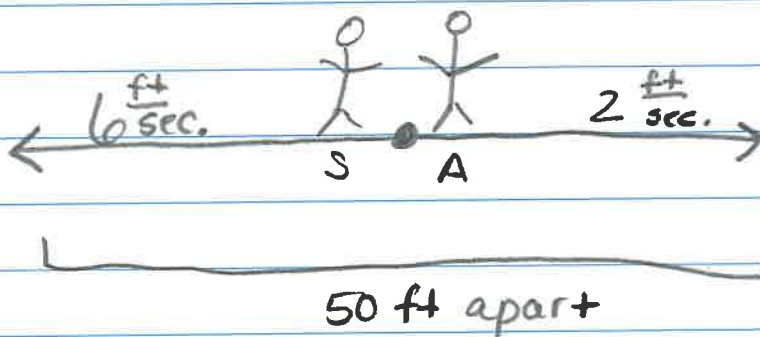
	d	r	t	Equation
1 st car	d	90	<u>t</u>	$d=90t$
2 nd car	d	120	$t-3$	$d=120(t-3)$

	d	r	t	Equation
1 st car	$d+180$	90	t	$d+180=90t$
2 nd car	d	60	t	$d=60t$



	d	r	t	Equation
Sam	$50 <$	6	t	$d=6t$
Alan	$>$	2	t	$d=2t$

$50=6t+2t$



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