Practice 7–4 Answers

1.)   Let x = # of 2–point problems   and y = # of 5–point problems

# of 2–point problems   **AND**   **# of 5–point problems**   **IS**   **Total # of problems**
      x   +   y   =   38

Points from # 2–point problems   **AND**   **Points from # 5–point problems IS**   **Total Points on Test**
        2x   +   5y   =   100

System of equations: x + y = 38   and   2x + 5y = 100   **Answer: (30,8) which means that there are 30 problems that are 2–point problems and 8 problems that are 5–point problems.**

2.)   Let x = # of houses   and y = $$ (Expenses & Income)

Expenses   **IS**   **$4 per house**   **AND**   **$$ spent on supplies**
   y   =   4x   +   315

Income   **IS**   **$25 per house**
   y   =   25x

System of equations: y = 4x + 315 (Expenses) and y = 25x (Income)   **Answer: (15, 375) which means they needed to clean 15 houses in order to break even (Spend $375 & Make $375).**

3.)   Let x = $$ Cost of a Case Juice   and y = $$ Cost of a Case of bottled H_2O
Baseball Team:
        Cost of Cases of Juice   **AND**   **Cost of Case of bottled H_2O**   **IS**   **Total Cost**
             6x   +   y   =   135

Softball Team:
        Cost of Cases of Juice   **AND**   **Cost of Case of bottled H_2O**   **IS**   **Total Cost**
             4x   +   2y   =   110

System of equations: 6x + y = 135 and 4x + 2y = 110   **Answer: ($20, $15) which means that it cost $20 for a Case of Juice and $15 for a Case of bottled H_2O.**

4.) Let x = # of minutes on aerobics (per week) and y = # of minutes weight training (per week)

# of minutes on aerobics (per week)   **AND** # of minutes weight training (per week) **IS Total min.**
                     x   +   y   = 330

Ratio of aerobics time to time weight training   **IS**   **six TO Five**

$$\frac{x}{y} = \frac{6}{5} \quad \textit{or when simplified} \quad 6y = 5x$$

System of equations: x + y = 330 and 6y = 5x **Answer: (180, 150) which means that she spent 180 minutes on aerobics and 150 minutes weight training during that week.**

5.) Let x = # of T–shirts   and y = $$ (Expenses & Income)

Expenses	IS	$3 per T–shirt		AND	$$ spent on equipment
y	=	3x		+	$1,530

Income	IS	$20 per T–shirt
y	=	20x

System of equations: y = 3x + 1,530 (Expenses) and y = 20x (Income) Answer: (90, 1,800) which means they needed to sell 90 T–shirts in order to break even (Spend $1,800 & Make $1,800).

6.) Let x = $$ Cost of a Roll of Streamers and y = $$ Cost of a balloon
First Trip:

Cost of Roll of Streamers	AND	Cost of balloons		IS	Total Cost
3x	+	15y		=	30

Second Trip:

Cost of Roll of Streamers	AND	Cost of balloons		IS	Total Cost
2x	+	4y		=	11

System of equations: 3x + 15y =30 and 2x + 4y = 11 Answer: ($2.5, $1.5) which means that it cost $2.5 for a Roll of Streamers and $1.5 for a balloon.

1.	$x + y = 38$	2.	$y = 4x + 315$	3.	$6x + y = 135$
	$2x + 5y = 100$		$y = 25x$		$4x + 2y = 100$

4.	$x + y = 330$	5.	$y = 3x + 1,530$	6.	$3x + 15y = 30$
	$\dfrac{x}{y} = \dfrac{6}{5}$		$y = 20x$		$2x + 4y = 11$