# **8.4 Practice Set**

1. State Cramer’s Rule.
2. What is a determinant and how is it calculated? Give an example.
3. What are the possibilities when $D=0$?
4. Describe the process of solving a system using Cramer’s Rule.

##  Solve each of the following systems of equations using Cramer’s Rule. If the system is dependent or inconsistent, state this.

1. $\left\{\begin{array}{c}x+4y=8\\x-y=0\end{array}\right.$
2. $\left\{\begin{array}{c}-3x+7y=10\\2x+y=-1\end{array}\right.$
3. $\left\{\begin{array}{c}9x-6y=-12\\3x-y=1\end{array}\right.$
4. $\left\{\begin{array}{c}5x-y-15z=-2\\4x+y-2z=12\\-5y+6z=-4\end{array}\right.$
5. $\left\{\begin{array}{c}4x-3y+z=24\\2x+y =7\\x -2z=-6\end{array}\right.$
6. $\left\{\begin{array}{c}x+y-z=3\\-x-y+z=-3\\-2x+2y+2z=-6\end{array}\right.$
7. $\left\{\begin{array}{c}6x+10y-2z=6\\x-y+z=15\\-3x+7y-4z=-24\end{array}\right.$
8. $\left\{\begin{array}{c}2x+3y-z=-1\\3x-4y+7z=18\\-4x-6y-2z=4\end{array}\right.$
9. $\left\{\begin{array}{c}5x-2y+4z=1\\20x+8y-16z=4\\15x-2y+8z=4\end{array}\right.$
10. $\left\{\begin{array}{c}2x 5z=15\\-5x-4y =-25\\x-y-15z=-10\end{array}\right.$

## **Distributed Practice Problems**

###  Set up an equation or system of equations for each of the following problems. Do not solve.

1. Pam can paint a room in 4 hours while it takes Marc 5 hours. How long would it take them to paint the room together?
2. It takes a car three hours longer than a train to travel a distance of 300 miles. If the train is moving 50 mph faster than the car, find the speed of the train.
3. Find the length of the unknown side of the triangle.

12 5 ft

12 12 ft

1. The size of a frog population increases at a rate of 4%. If the size of the current population is 380, how long will it take the population to double in size?
2. How long will it take $10,000 to earn $400 in interest if it is invested at 6% interest?
3. The sum of three numbers is 47. If the first number combined with twice the third number is 32 and the third number is twice the second number, find the three numbers.

###  Graph each of the following relations. Give the x-intercept(s), y-intercept, domain, range, and the equation(s) of any asymptote(s).

1. $x=y^{2}-6y+2$
2. $y=-\left|x\right|+2$
3. $y=log\_{3}\left(x-1\right)$
4. $\frac{(x-3)^{2}}{9}+\frac{\left(y+2\right)^{2}}{9}=1$
5. $y=\frac{1}{x-3}+6$