

**3-8B Skills Practice***Solving Systems of Equations Using Inverse Matrices and Calculators*

Use a matrix equation and your calculator to solve each system of equations.

1.  $p - 3q = 6$   
 $2p + 3q = -6$

2.  $-x - 3y = 2$   
 $-4x - 5y = 1$

3.  $2m + 2n = -8$   
 $6m + 4n = -18$

4.  $-3a + b = -9$   
 $5a - 2b = 14$

5. Mr. Smith's art class took a bus trip to an art museum. The bus averaged 65 miles per hour on the highway and 25 miles per hour in the city. The art museum is 375 miles away from the school, and it took the class 7 hours to get there. How many hours does the bus spend driving on the highway and how many hours does the bus spend driving in the city?

a) Define your variables. Write a system that represents the situation.

b) Write the matrix equation for the system AND then use your calculator to solve.

c) Interpret the results.

6. At the arcade Sami won 2 blue tickets, 1 yellow ticket and 3 red tickets or 1500 total points. Jamal won 1 blue ticket, 2 yellow tickets, and 2 red tickets for 1225 total points. Yvonne won 2 blue tickets, 3 yellow tickets and 1 red ticket or 1200 total points. Write and solve a system of equations to determine the point value of each type of ticket.

a) Define your variables. Write a system that represents the situation.

b) Write the matrix equation for the system AND then use your calculator to solve.

c) Interpret the results.