New Jersey City University
Intermediate Algebra
Peer Led Team Learning Workshop 5B
Applications of Systems of Linear Equations

Section 4.1

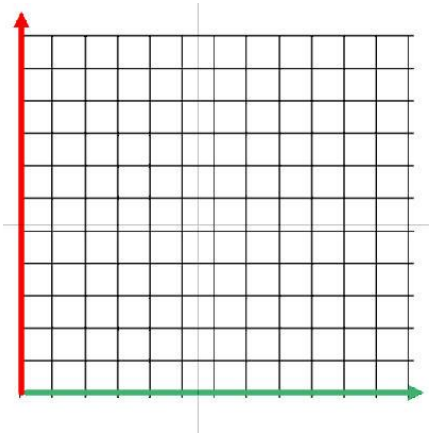
1) Wayne Burton is having some tile replaced in his bathroom. He has obtained an estimate from two tile companies. Old World Tile gave an estimate of $200 to remove the old tile and $50 per hour to place new tile on the wall. Modern Bathroom Headquarters gave an estimate of $300 to remove the old tile and $30 per hour to place new tile on the wall.

A) Create a cost equation for each company where y is the total cost of the tile work and x is the number of hours of labor used to install new tile. Write a system of equations.

B) Graph the two equations using the values $x = 0, 4,$ and $8.$ Choose an appropriate scale for the y-axis.

C) Determine from your graph how many hours of installing new tile will be required for the two companies to cost the same.

D) Determine from your graph which company costs less to remove old tile and to install new tile if the time needed to install new tile is 6 hours.



Section 4.3

2) A recent concert at New Jersey City University had a paid audience of 987 people. Advance tickets were $9.95, and tickets at the door were $12.95. A total of $10,738.65 was collected in ticket sales.

A) Write a system of linear equations where a is the number of advance tickets sold and d is the number of tickets sold at the door.

B) Solve the system of equations from (A) and use your results to determine how many of each type of ticket were sold.