

MATH 6: GRAPHS OF LINEAR EQUATIONS

GRAPHS OF LINES

You need only two points to graph a line.

GRAPHING LINEAR SYSTEMS OF EQUATIONS FOR 2 VARIABLES

Graph the two lines. The solution to the system of equations is their point of intersection. What happens if the lines are parallel?

HOMEWORK

1. Draw the following equations on the same graph: $y = x$, $y = 3x$, $y = \frac{1}{3}x$
2. Graph these equations on the same graph paper using two ordered pairs for each line:
 $y = x$, $y = -x + 6$, $y = -x + 2$
3. A man rented a car and he was charged \$50 for the rent and additional \$1.50 for every mile traveled. If he traveled x miles, he had to pay \$ y .
 - (a) Write the equation of the line using x and y .
 - (b) Graph the line graph.
 - (c) How much had he to pay if he traveled 80 miles? How about if he traveled 120 miles?
 - (d) What distance did he travel if he paid \$92? How about for \$128?
 - (e) If gas costs \$2 per gallon and the car can run 40 miles per gallon, find the total cost (include the rental) if he traveled \$144 miles.
4. Graph these two lines and solve the system of equations.

$$\begin{cases} 6x - 5y = -3 \\ x + y = 5 \end{cases}$$

5. Solve the system of equations by graphing the two lines.

$$\begin{cases} x + 3y = 10 \\ 2x + y = 5 \end{cases}$$

6. Find the missing coordinates:
 - (a) 3 points A(0,0), B(1,3), D(5,-2) are vertices of a parallelogram ABCD. What are the coordinates of C?
 - (b) Can you find out the general case: if A(0,0), B(b_1 , b_2), D(d_1 , d_2) are vertices of a parallelogram ABCD. What are the coordinates of C?
7. Two years ago, a father was 5 times as old as his son. In two years, the father will be 4 times as old as his son. How old are the father and son now?
8. Tyler bought 2 pounds of fish and 1 pound of shrimp for \$24. Khush spent \$27 for 1 pound of fish and 2 pounds of shrimp. What are the prices per pound for fish and for shrimp?