Algebra Questions

1. Using the x, y graph plot the point$ (-5,-6)$
2. Give an ordered pair $\left(u,v\right)$of numbers that satisfy the following equation: $u-4v=6$
3. For each point in the table below, decide whether it is on Line 1, Line 2, both, or neither.

 Line 1: $ 9x+2y=-10$
Line 2: $y=-x-5$

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (x, y) | ***Line 1*** | ***Line 2*** | ***Both Lines*** | ***Neither Line*** |
| *(-6, 7)* |  |  |  |  |
| *(-2, 4)* |  |  |  |  |
| *(0, -4)* |  |  |  |  |

1. Graph the line whose *y*-intercept is *3* and whose x-intercept is *2*.
2. Graph the line. $y= -x-3$
3. Graph the line. $2x-5y=15$
4. Graph the line with slope $-\frac{1}{3} $ passing through the point$ (3, 5)$  .
5. Find the slope of the line graphed below (-3, 7) and (2, -6)
6. Graph the line$ y=-6$
7. Graph the inequality below on the number line. $x<9$
8. Find the *y* -intercept of the line whose equation is $ y=-\frac{6}{7}x-\frac{8}{3}$
9. Find the *x*-intercept and *y*-intercept of the line given by the equation $9x-6y=-6$
10. Find the slope of the line $2x+4y=-3$
11. A line passes through the point $\left(2, -7\right) $and has a slope of 3  Write an equation for this line.
12. Owners of a recreation area are filling a small pond with water. They are adding water at a rate of 35 liters per minute. There are 700 liters in the pond to start. Let *W* represent the amount of water in the pond (in liters), and let *T* represent the number of minutes that water has been added. Write an equation relating *W* to *T*, and then graph your equation using the axes below.
13. Suppose that a household's monthly water bill (in dollars) is a linear function of the amount of water the household uses (in hundreds of cubic feet, HCF). When graphed, the function gives a line with a slope of *1.75*. If the monthly bill for *15* HCF is *$24.01*, what is the monthly bill for *11* HCF?
14. The monthly cost (in dollars) of a long-distance phone plan is a linear function of the total calling time (in minutes), as shown in the figure below. The monthly cost for *47* minutes of calls is *$14.97* and the monthly cost for *100* minutes is *$21.86*. What is the monthly cost for *57* minutes of calls?
15. Find an equation of the line that is parallel to the line $y=2x-2$ and that passes through the point $(5, -4)$.
16. The sum of two numbers is *63*. The larger number is *5* more than the smaller number. What are the large number and the small number?
17. In a family there are two cars. The sum of the average miles per gallon obtained by the two cars in a particular week is *65*. The first car has consumed *56* gallons during that week, and the second has consumed *25* gallons, for a total of *1325* miles driven by the two cars combined. What was the average gas mileage obtained by each of the two cars in that week?
18. A motorboat travels *595 mi* in *7* hours going upstream and *484 mi* in *4* hours going downstream. What is the rate of the boat in still water and what is the rate of the current?