

**Final Exam Review – Accelerated Students**

For #1 - 13, you may not use a calculator

1. Solve the following equations:

a.  $\frac{1}{2}(2x - 6) = 5(x + 4)$

b.  $6x = 3 - 17x$

c.  $5k + 30 = 10k + 10$

d.  $7x = 3x + 2$

e.  $\frac{3}{8}x + 8 = \frac{1}{4}x + 4$

f.  $3x + 2.4 = 6x + 1.8$

g.  $3y + 5 = 5y + 4$

h.  $0.9x + 3 = \frac{4}{5}x + 27$

i.  $4x + 15 = 2x + 30$

j.  $3b + 30 = 5b + 20$

2. Solve and graph the following inequalities:

a.  $5 - 9a < -67$

b.  $3.5y > -0.3y + 8$

c.  $2(k + 4) \leq 10(2k + 7)$

d.  $\frac{m}{3} - 7 \leq 11 + 2m$

3. Determine the equation for the line that has a slope of 3 and passes through the y-axis at -5.

4. State the slope and y-intercept of the line whose equation is  $y = 4x - 7$ .

5. Determine the equation of the line with slope of  $\frac{2}{5}$  and a y-intercept of 7.

6. Determine the slope and y-intercept of the line whose equation is  $y = -x + 9$ .

7. Determine the slope and y-intercept of the line whose equation is  $y = 6x$ .

8. Given the equation  $y = \frac{1}{2}x - 7$ , what are the slope and y-intercept?

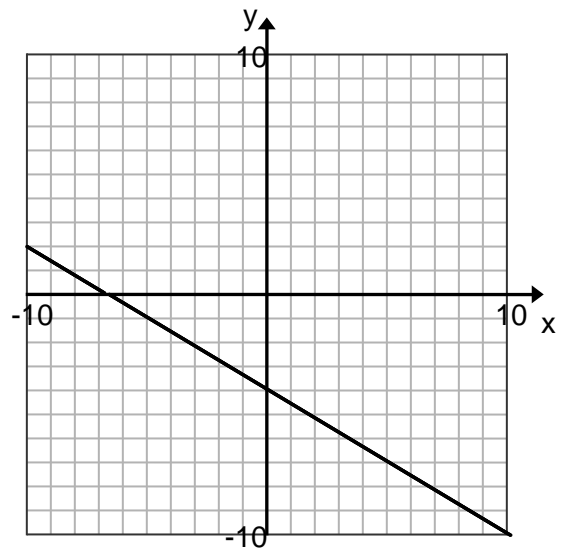
9. Refer to the graph at the right.

a. What is the slope?

b. What is the y-intercept?

c. What is the equation of the line?

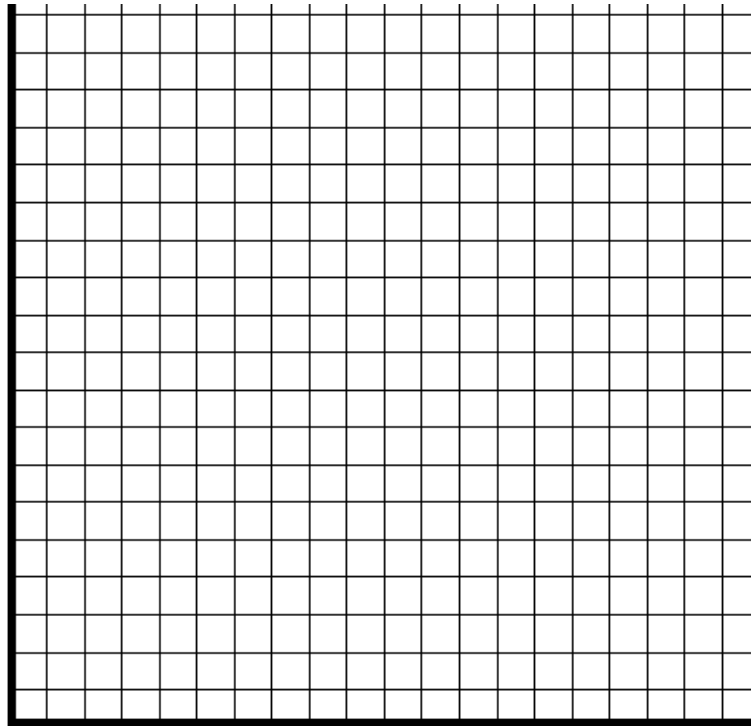
d. Is this a proportional relationship?



10. Shirley left home on her bike and rode 2 miles to the mall at a speed of 30 miles per hour.

a. Write a rule that represents Shirley's distance from home at any time.

b. Graph this relationship.

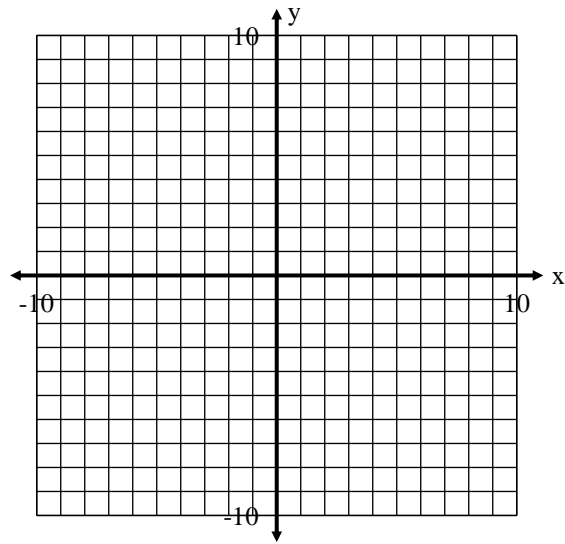


c. What is the slope of the line? What does this number represent?

d. Is the relationship between Shirley's distance from home and time proportional?

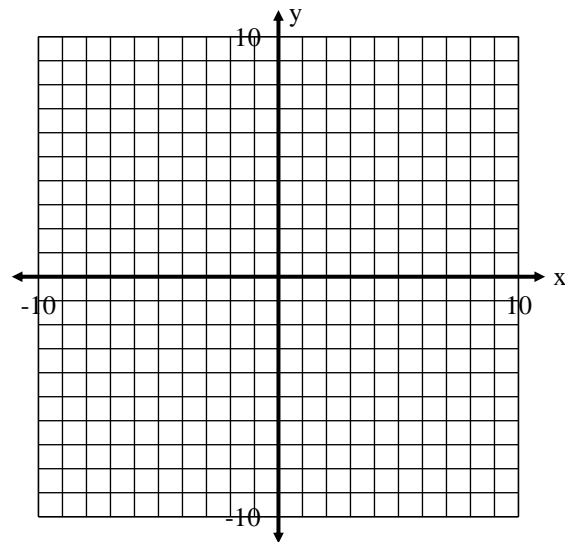
11. Complete the chart and graph the equation  $y = -2x + 3$ .

x	y
-2	
-1	
0	
1	
2	



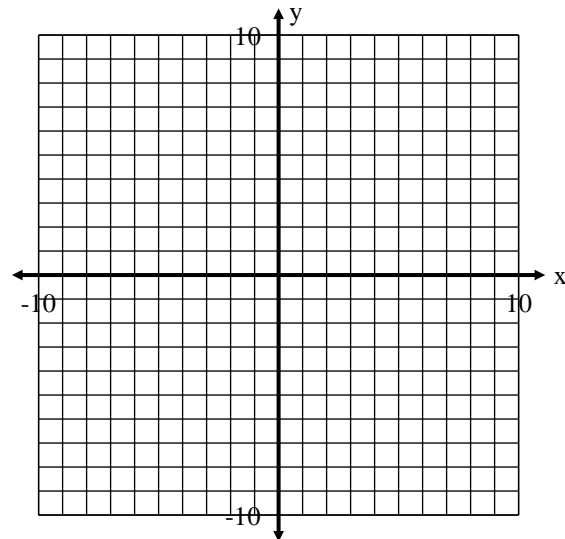
12. Complete the chart and graph the equation  $y = 3x - 5$ .

x	y
-2	
-1	
0	
1	
2	

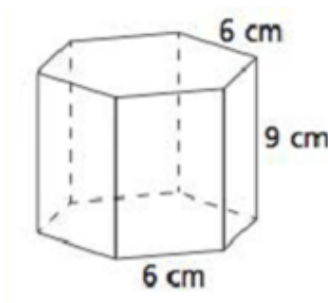


13. Complete the chart and graph the equation  $y = -x + 8$ .

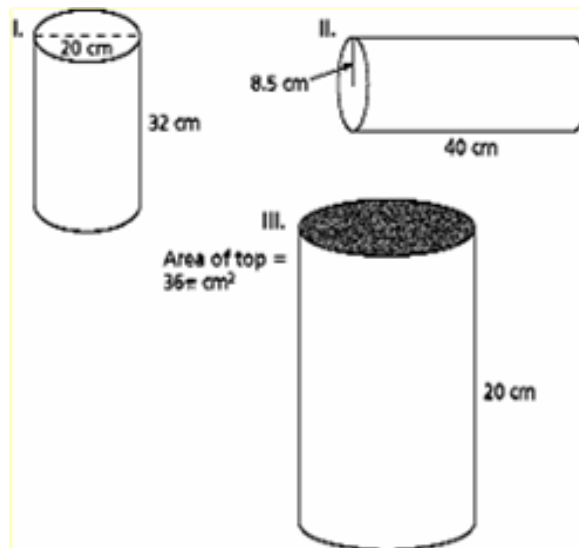
x	y
-2	
-1	
0	
1	
2	



14. Find the surface area and volume of the regular hexagonal prism shown below. The base has an area of 30.6 square centimeters.



15. Use the closed cylinders below to answer each of the following questions.



- a. What is the surface area of each cylinder?
- b. What is the volume of each cylinder?
16. From a shipment of 500 batteries, a sample of 25 was selected at random and tested. If 2 batteries in the sample were found to be dead, how many dead batteries would be expected in the entire shipment?