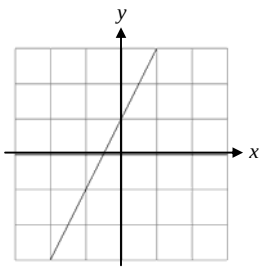
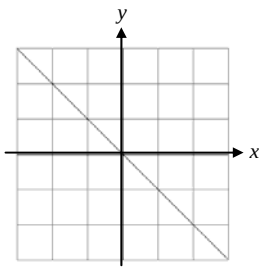
Algebra II
Chapter 2 REVIEW

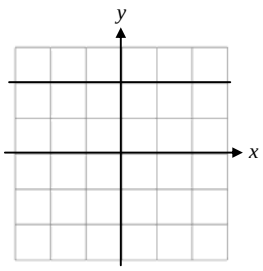
Name: _____
Block: _____

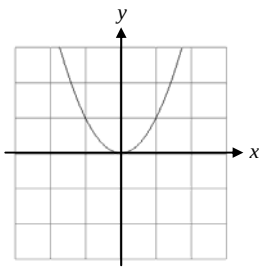
READ EACH QUESTION CAREFULLY AND REMEMBER TO SHOW ALL YOUR WORK!

1. Which of the following exhibit Direct Variation? For the one that does, write the direct variation equation. _____

A 

B 

C 

D 

The following table gives the height of waves, *h* (in feet) and the depth of the water, *d* (in feet) at that height. Use this information for questions 2 - 3.

Height of wave (*h*)	Depth of water (*d*)
6.5	**8.45**
7	**9.1**
7.5	**9.75**
8	**10.4**

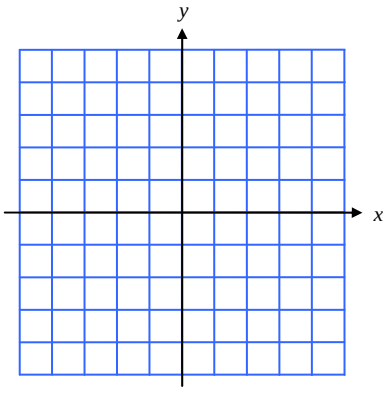
2. Is there a common ratio of the height of the wave and the depth of the water? If there is, write an equation relating the two variables.

3. If a wave breaks at a depth of 5.2 feet, what is its height?

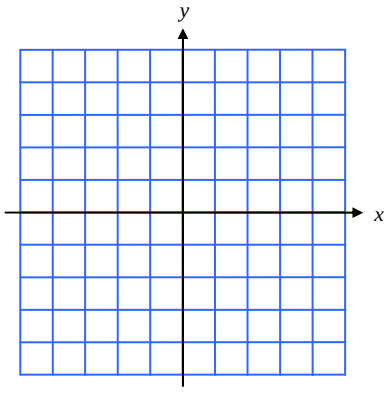
4. Write the slope – intercept form of the equation of the line that has a slope of –2 and a *y* – intercept of 7.

For questions 5 and 6, graph each equation on the axes provided.

5. $y = -\frac{3}{4}x + 5$



6. $y - 3 = \frac{2}{3}(x + 1)$



Use the following situation for questions 7 - 10. In a science experiment a flask of water was left out to evaporate, in order to recover a dissolved salt. After 3 hours, there were 150 cm^3 of water left in the flask, and after 5 hours there were 40 cm^3 left.

7. Write 2 ordered pairs.

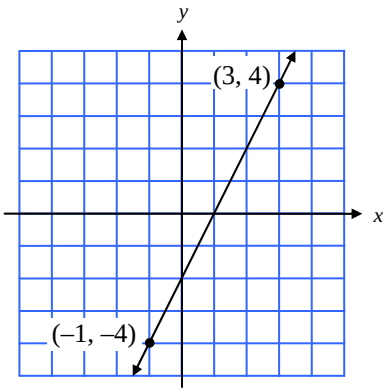
8. Find the slope of this function.

9. Write a point – slope equation for *y*, the amount of water left in the flask after *x* hours.

10. How much water was in the flask when it was first put out?

11. An online computer service charges users a monthly fee of $12 plus $3 per hour of connect time. Write an equation to model this situation. Be sure to define any variables used.

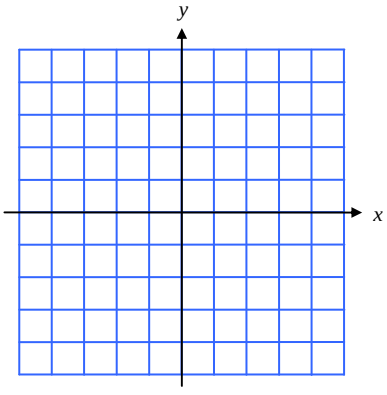
12. Write the equation of the line shown at the right.



For questions 13 – 14, let $f(x) = 2x + 1$.

13. Find $f(2)$.

14. Graph the function if $x \geq 2$.



15. State the Domain and Range of the function when $x \geq 2$.

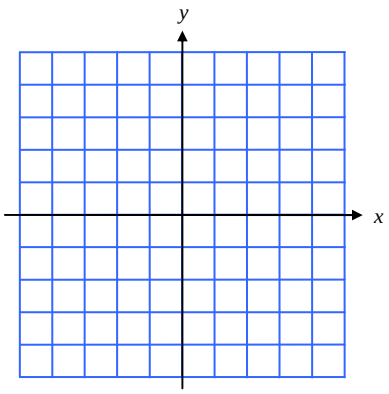
Domain:

Range:

16. Graph $f(x) = -4$ and state the domain and range of your function.

Domain:

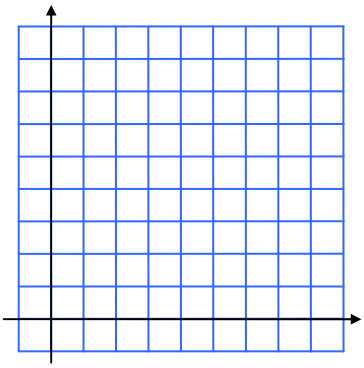
Range:



For questions 17 – 20, use the following data which shows the number of FM radio stations since 1989.

Year	# of FM Radio Stations
1989	4269
1990	4392
1991	4570
1992	4785
1993	4971
1994	5109
1995	5703

17. Draw a scatter plot of your data and draw a line of fit. Then, create an equation, in slope-intercept form, for that line.



18. Use your calculator to find the slope – intercept form of the linear regression equation.

19. Using the context of this problem, explain the slope.

20. Using your *linear regression equation*, how many radio stations will there be in the year 2010?

21. Draw a scatter plot that has a correlation coefficient of $r = -1$.