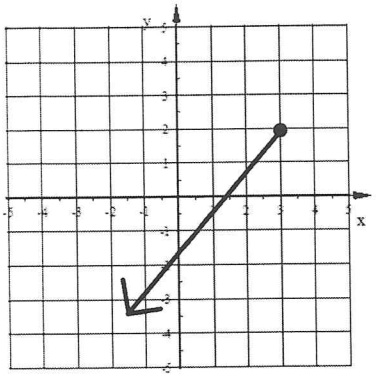
Algebra 1 Review Chapter 5, Sec 6-7 Fall 2014

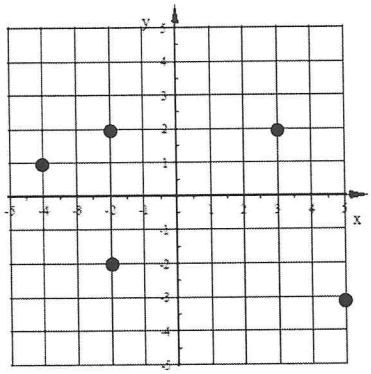
1. Find the domain and range of each.

a) $(5,4)\ (3,-7)\ (8,1)\ (-2,4)$

b) Use the graph below.



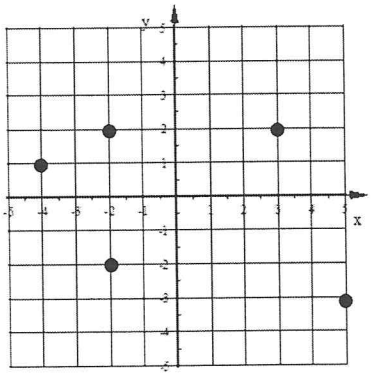
c) Use the graph below.



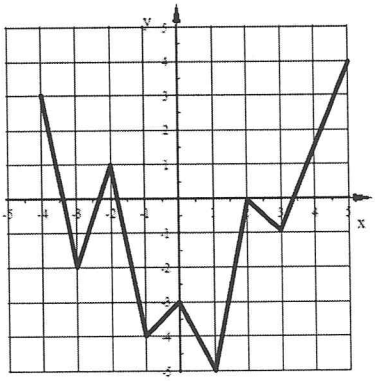
2. Is each relation a function?

a) $(3,-2)\ (-2,7)\ (7,8)\ (-3,0)$

b)



c)



d)

X	Y
8	2
−7	−1
−5	10
−7	4

e)

X	Y
−1	3
3	−5
−9	−1
11	3

3. Given $f(x) = 3x^2 - 4$ find $f(5)$

4. Given $g(a) = 2a^2 - 9$. Find the range of $g(a)$ that corresponds to this domain $\{-5,2,5,10\}$

5. Given $m(p) = 2p - 5$ and $h(y) = y + 6$

a) Find $10m(4) + 2h(3)$

b) If $m(p) = 40$ find p.

6. Use a separate sheet of graph paper to graph each function. Make sure your graph shows the whole shape which means the vertex and 2 points on either side.

a. $y = -4|x+2| + 3$ b. $y = -2x^2 - 12x - 13$ c. $f(x) = (x-1)^2 - 4$ d. $y = \frac{3}{2}|x-1| - 4$

7. Model each situation with a function rule. Define your variables.

a) Theamount of time I spend swimming is a function of the number of laps I swim. It takes me 28 seconds to swim a lap.

b) A balloon is released from the roof of a 50 foot tall building. The height of the balloon is a function of how much time has ellapsed since it was released. The balloon rises 220 feet every minute.

8. Write a function rule for each table.

a)

X	Y
1	−3
2	−2
3	−1
4	0
5	1

b)

X	Y
−4	10
−2	5
0	0
6	−15
8	−20

9. Is each an example of Direct Variation? If yes, state the variation constant and write a Direct Variation equation.

a)

X	Y
3	8
4	12
5	14
6	16

b)

X	Y
−8	−30
−2	−7.5
4	15
12	45

c)

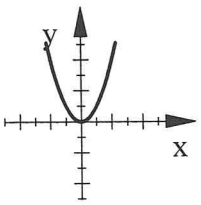
X	Y
−5	4
15	−12
25	−20
40	−32

d)

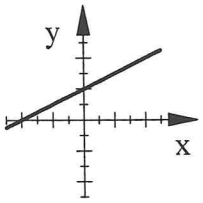
X	Y
4	10
6	15
14	35
30	12

10. Is each graph an example of direct variation?

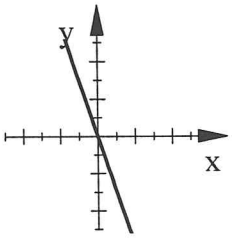
a)



b)



c)



11. The amount of time spent checking papers varies directly with the number of papers to be checked.

# papers checked	Time spent checking (min)
24	156
18	117
56	364
62	403

a) Find the variation constant. Include units.

b) Write a direct variation equation.

c) Find the time required to check 84 papers.

12. A direct variation passes through the point $(15,20)$. Write a direct variation equation using this information.

13. The table below shows direct variation. Find the missing value of x and y.

X	Y
−8	30
6	−22.5
9	y
x	75

14. The number of cars washed varies directly with the number of people helping at the car wash. 182 cars were washed when 13 people helped.

a) Find the variation constant (include units).

b) Write a direct variation equation.

c) How many people are needed to wash 294 cars?

15. The number of radios made varies directly with the number of hours the factory is open. In 12 hours there are 250 radios made. At this rate how many hours will it take to make the 400 radios that have been ordered.

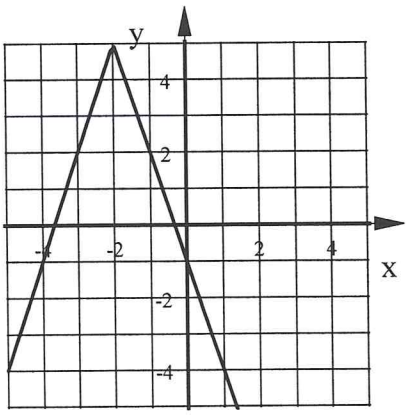
16. Write the equation of each absolute value function.

a) Translated 7 units up, 3 units right, 4 times taller, opens up.

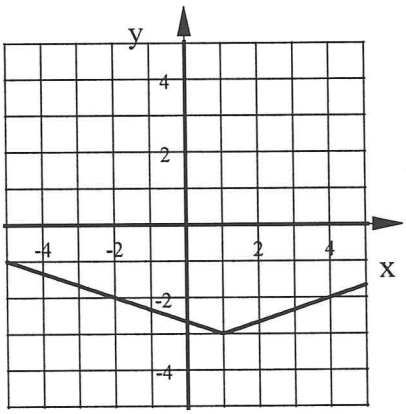
b) Translated 2 units left, 1/3 as tall, opens down.

17. Write the equation of each graph.

a)



b).



Algebra 1 Review Chapter 5, Sec 6-7 ANSWERS Fall 2014

1. a) D: $\{-2,3,5,8\}$ R: $\{-7,1,4\}$ b) D: $x \le 3$ R: $y \le 2$ c) D: $\{-4,-2,3,5\}$ R: $\{-3,-2,1,2\}$

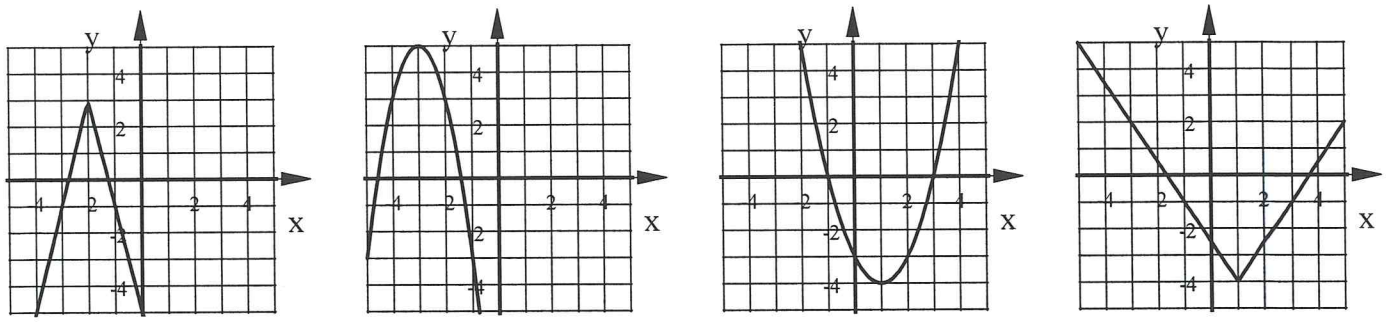
2. a) Yes b) No c) Yes d) No e) Yes

3. $f(5) = 71$

4. Range: $\{-1,41,191\}$

5. a) 48 b) 22.5

6. a) b) c) d)



7. a) EQ: $T = 28L$ T=time spent swimming in seconds L=# laps swum
b) EQ: $h = 50 + 220m$ h=total height of balloon m=# of minutes since release

8. a) $y = x - 4$ b) $y = -2.5x$

9. a) No b) Yes. $k = 3.75$ EQ: $y = 3.75k$ or $\frac{y}{x} = 3.75$
c) Yes. $k = 0.8$ EQ: $y = 0.8x$ or $\frac{y}{x} = 0.8$ d) No

10. a) NO b) NO c) Yes

11. a) 6.5 min per paper b) $y = 6.5x$ y=# min x=# papers c) 546 minutes

12. $\frac{y}{x} = \frac{4}{3}$ or $y = \frac{4}{3}x$ 13. $y = -33.75$ $x = -20$

14. a) $k = 14$ cars per person b) $y = 14x$ y=# cars x=# people c) 21 people

15 19.2 hous. 16. a) $y = 4|x-3|+7$ b) $y = -\frac{1}{3}|x+2|$

17. a) $y = -3|x+2|+5$ b) $y = \frac{1}{3}|x-1|-3$