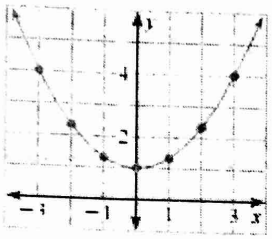
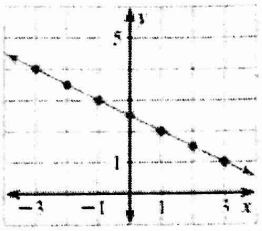
Distinguishing Functions Homework Name:_____

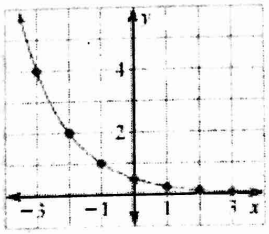
1. Determine whether each of the following functions are linear, exponential, and quadratic.

a. 

quadratic

b. 

linear

c. 

exponential

Determine whether each of the following functions are linear, exponential, or quadratic.

2.

x	y	
0	6	*2
1	12	*2
2	24	*2
3	48	

Exponential r=2

3.

x	y	
0	10	+8
1	18	+10
2	28	+12
3	40	

+2, +2

Quadratic

4.

x	y	
3	4	-6
6	2	-6
9	-8	-6
12	-14	

linear d=-2

5. Is this function linear, quadratic, or exponential? Explain and find y when $x = 15$.

x	y	
-4	22	-5
-3	17	-5
-2	12	-5
-1	7	-5
0	2	

linear d=-5

$y = -5x + 2$

$y = -5(15) + 2$

$y = -73$

6. Is this function linear, quadratic, or exponential? Explain.

x	y	
0	5	+2
-1	10	*2
-2	20	*2
-3	40	*2
-4	80	

exponential r = 2

When the x value increases by 1, the y increases by common ratio.

7. Is this function linear, quadratic, or exponential? Explain.

x	−3	−2	−1	0
y	0	5	8	9

+5 +3 +1

-2 -2

quadratic second diff = -2

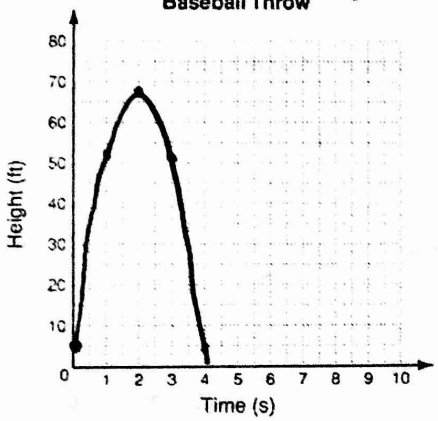
When x value increases by 1, the y value increases by second common difference.

Write the correct answer.

8. The table shows the height of a baseball for different times after it was thrown. Graph the data. Which kind of model best describes the data?

Height of Baseball					
Time (s)	0	1	2	3	4
Height (ft)	5	53	69	53	5

+48 +16 -16 -48
-32 -32 -32



quadratic

9. The table shows the cost of peaches. Look for a pattern and determine which kind of model best describes the data.

Cost of Peaches				
Pounds	1	2	3	4
Cost ($)	1.29	2.58	3.87	5.16

+1 +1 +1
+1.29 +1.29 +1.29

linear d=1.29

10. The table shows the number of computers in a school for four years.

Number of Computers				
Year	'00	'01	'02	'03
Computers	14	22	30	38

+8 +8 +8

Write a function to model the data. Then use the function to predict how many computers the school will have in 2006 if the pattern continues.

linear d=8

y = 8x + 14
y = 8(6) + 14
y = 62 computers

The chart shows the ticket sales for movies on two different screens at one theater over four days. Select the best answer.

11. Which kind of model best describes the ticket sales for the movie on screen 1?

A linear C exponential
B quadratic D none of these

12. Which function describes the data for screen 1?

F $y = 40x^2$ H $y = 400x$
G $y = 40x + 400$ J $y = 400(40)^x$

13. Which kind of model best describes the ticket sales for the movie on screen 2?

A linear C exponential
B quadratic D none of these

	Screen1	Screen 2	
Starting point → Day 1	400	3000	
Day 2	440	2400	*-.8
Day 3	480	1920	*-.8
Day 4	520	1536	*-.8

*40 *40 *40