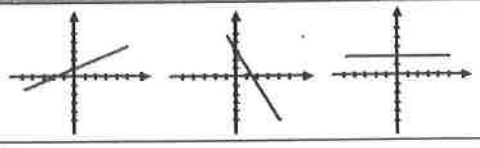
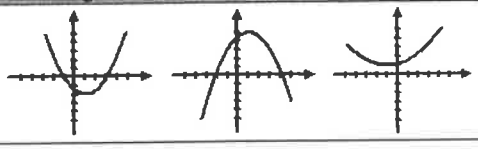
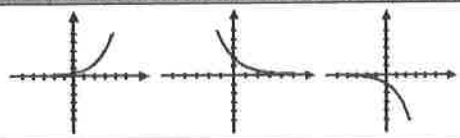
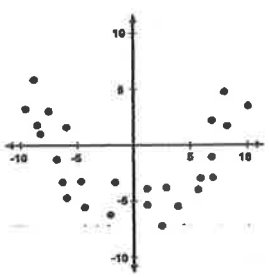
Unit 5 Day 1: Identifying the Function
Linear, Quadratic, or Exponential Functions

Name: KEY

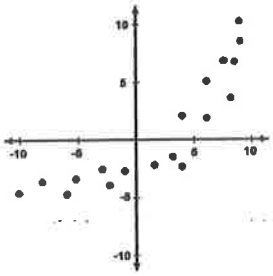
GRAPHICAL EXAMPLES

LINEAR FUNCTIONS	QUADRATIC FUNCTIONS	EXPONENTIAL FUNCTIONS
		

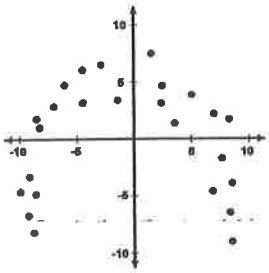
1. Graphically identify which type of function model might best represent each scatter plot.



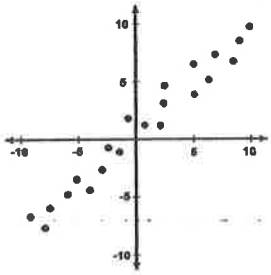
Model (circle one): Linear **Quadratic** Exponential



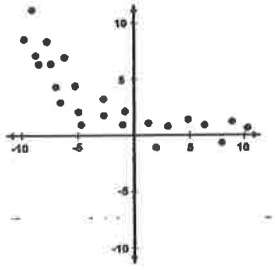
Model (circle one): Linear Quadratic **Exponential**



Model (circle one): Linear **Quadratic** Exponential



Model (circle one): **Linear** Quadratic Exponential



Model (circle one): Linear Quadratic **Exponential**

2. Match each graph with its description.

F I. An **exponential** function that is always **increasing**.

C II. An **exponential** function that is always **decreasing**.

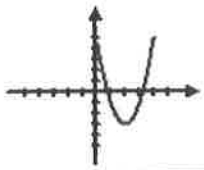
E III. A **quadratic** function with a **local maximum**.

A IV. A **quadratic** function with a **local minimum**.

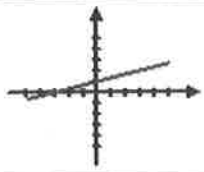
B V. A **linear** function that is always **increasing**.

D VI. A **linear** function that is always **decreasing**.

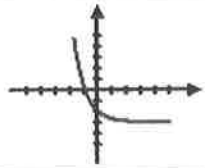
a.



b.

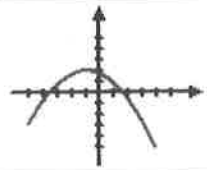


c.

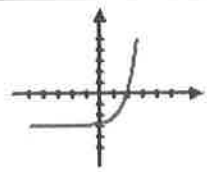


d.

e.



f.



10. Based on the function given identify which description best fits the function.

A. $f(x) = x(2x + 3)$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

B. $g(x) = 3(1 - 2x) - 4$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

C. $h(x) = 2 + \left(\frac{1}{2}\right)^x$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

D. $m(x) = 3 \cdot (2)^x + 1$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

E. $p(x) = 2 - 3x^2 + x$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

F. $q(x) = \frac{1}{2}x - 1$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

11. Based on the partial set of values given for a function, identify which description best fits the function.

x	0	1	2	3	4
$a(x)$	1	5	9	13	17

$\frac{4}{1}$

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

x	1	2	3	4	5
$b(x)$	1	2	1	-2	-7

+1 -1 -3 -5

-2 -2 -2

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

x	1	2	3	4	5
$c(x)$	0	2	6	14	30

+2 +4 +8 +16

+2 +4 +8

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

x	0	1	2	3	4
$d(x)$	3	0	-1	0	3

-3 -1 +1 +3

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

x	1	2	3	4	5
$e(x)$	65	33	17	9	5

-32 -16 -8 -4

+16 +8 +4

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay

x	1	2	3	4	5
$f(x)$	9	7	5	3	1

Model (circle one):

Linear Growth	Quadratic (Local Max)	Exponential Growth
Linear Decay	Quadratic (Local Min)	Exponential Decay