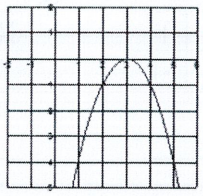
Acc Algebra I Key Unit 7 – Comparing and Contrasting Functions 7.7 - Practice

Name: _____ Date: _____

A.

x	0	1	2	3
y	4	12	20	28

B.



C.
This type of function has a constant rate of change.

D.
Two Forms:
$y = ax^2 + bx + c$
or
$y = a(x-h)^2 + k$

E.
This type of function has an asymptote.

F.

x	y
1	2
2	4
3	8
4	16

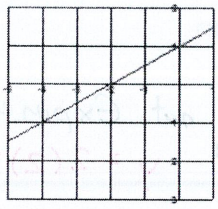
G.

$y = ab^x$

H.

x	1	2	3	4
y	500	100	20	4

I.

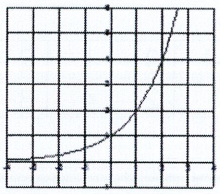


J.
This type of function has a vertex and axis of symmetry

K.

x	0	1	2	3
y	26	29	30	29

L.



M.
Arithmetic Sequence

N.
y=mx+b

O.
This type of function has a common Ratio

P.
Geometric Sequences

Write the letters of the functions or characteristics under the appropriate category.

Linear:
A, C, I, M, N

Quadratic:
B, D, J, K

Exponential:
E, F, G, H, L, O, P

Write the **equation** for each of the tables (A, F, H, & K).

A:
$y = 8x + 4$

F:
$y = 1(2)^x$ $y = 2(2)^{x-1}$

H:
$y = 2500(\frac{1}{5})^x$ $y = 500(\frac{1}{5})^{x-1}$

K:
$f(x) = -(x-2)^2 + 30$

Comparing Functions

Tell whether the table of values represents a linear, exponential, or quadratic function.

1.

X	-1	0	1	2	3
Y	15	5	-1	-3	-1

Quadratic

2.

X	-3	-2	-1	0	1
Y	11	8	5	2	-1

Linear

3.

X	-1	0	1	2	3
Y	16	8	4	2	1

Exponential

Write an equation to represent #2 and #3 from above.

2. $y = -3x + 2$

3. $y = 4(\frac{1}{2})^{x-1}$ $y = 8(\frac{1}{2})^{x}$

4. Describe and correct the error in writing an equation for the function represented by the ordered pairs: (-1,1), (0,2), (1,4), (2,8), (3,16)

X	-1	0	1	2	3
Y	1	2	4	8	16

The ordered pairs represent an exponential function.
$y=mx + b$
$y=2x + 2$ This is Linear, not Exponential
$y = 4(2)^{x-1}$ $y = 2(2)^{x}$

Match the scenario to the type. You may not use all types.

5. Each year, Jane records the number of tulips in her garden. The first year, she counted 5 tulips. She noticed that the tulips triple each year. C, G

6. Coach Merrill kicks a soccer ball into the air. The height of the ball is measured over the next several seconds. After 3 seconds, it reaches a maximum height of 100 feet. E

7. A taxi driver charges an $8 minimum, plus $0.10 per mile driven. A, F

8. Ms. Wiggins starts with 100 pencils on the first day of school. Each week, her supply decreases by 6 pencils. B, F

9. Dr. Jones starts with 6000 bacteria in the lab. Each hour, the amount decreases by half. D, G

10. You take out a loan for $5000, and each month, you pay off $100. B, F

A. Increasing Linear Function

B. Decreasing Linear Function

C. Exponential Growth

D. Exponential Decay

E. Quadratic Function

F. Arithmetic Sequence

G. Geometric Sequence