Name:_____ Date:_____

Unit 8 REVIEW GUIDE

For each of the following determine if the function is Linear, quadratic, exponential

1) (0,3), (1, 5), (2, 7), (3, 9)

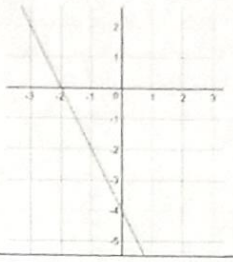
LINEAR

2)

X	-2	-1	0	1	2
y	4	1	0	1	4

QUADRATIC

3)



LINEAR

4) $y = (x-3)^2 + 2$

QUADRATIC

5) $f(x) = -7x + 12$

LINEAR

6)

X	-2	-1	0	1	2
y	5	10	20	40	80

EXPONENTIAL

7) A function that has a constant rate of change

LINEAR

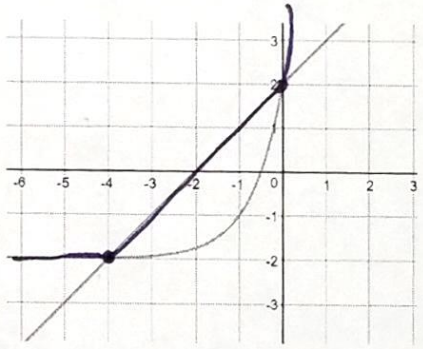
8) A function that has an asymptote

EXPONENTIAL

9) A function that has a vertex

QUADRATIC

Below is the graph of an <u>exponential function</u> and a <u>linear function</u>. For each of the following intervals state which graph is greater



10) Between $(-\infty, -4)$

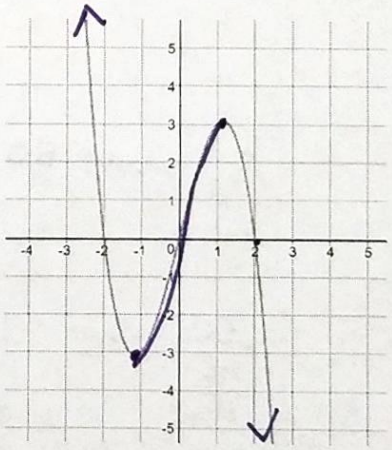
Exponential

11) Between $-4 < x < 0$

LINEAR

12) Between $(0, \infty)$ Exponential

Below is a graph of a special function. Match the following notations with the correct vocabulary



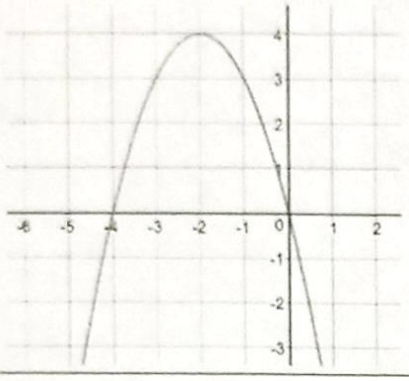
13) Interval(s) of increase g	**a) (-1,-3)**
14) Interval(s) of decrease e	**b) (2,0) and (-2,0)** (0,0)
15) Zeros b	**c) (1,3)**
16) Y-Intercept h	**d)** $y \to -\infty$
17) Local Maximum c	**e) (-∞,-1) and (1,∞)**
18) Local Minimum a	**f)** $y \to \infty$
19) As $x \to -\infty$ f	**g) -1 < x < 1**
20) As $x \to \infty$ d	**h) (0,0)**

21) Determine the rate of change of the function f(x) between the points of x = 2 and x = 6

x	-4	-2	0	2	4	6
f(x)	7	6.5	6	5.5	5	4.5

(2, 5.5) (6, 4.5)

$\frac{4.5-5.5}{6-2} = \left(-\frac{1}{4}\right)$



22) What type of function is this?

QUADRATIC

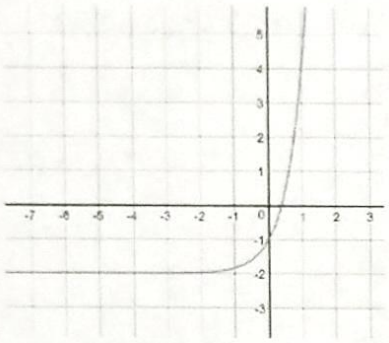
23) What is the end behavior?

$x \to -\infty \quad y \to -\infty$

$x \to \infty \quad y \to \infty$

24) What is the vertex?

(-2, 4)



25) What type of function is this?

EXPONENTIAL

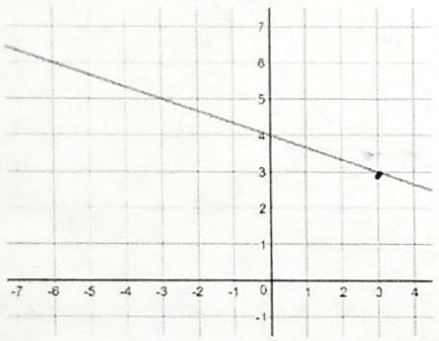
26) What is the end behavior?

$x \to -\infty \quad y \to -2$

$x \to \infty \quad y \to \infty$

27) What is the asymptote?

$y = -2$



28) What type of function is this?

LINEAR

29) What is the end behavior?

$x \to -\infty \quad y \to \infty$

$x \to \infty \quad y \to -\infty$

30) What is the average rate of change?

$-1/3$

31) Between what intervals is the speed the greatest?

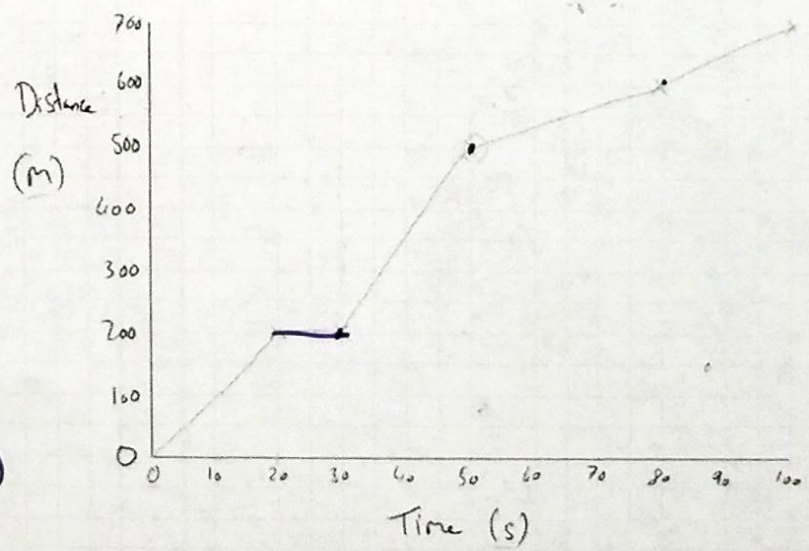
30 AND 50

32) Between what intervals is the speed the least?

20 AND 30

33) What is the average rate of change between 50 seconds and 80 seconds? (50, 500) (80, 600)

$\frac{600-500}{80-50} = \frac{10}{3}$ or 3.33



34) What is the domain of the following set of ordered pairs?
(1, 4), (2, 8), (3,16), (4, 32), (5, 64)

1, 2, 3, 4, 5

35) What is the range of the following set of ordered pairs?
(1, 4), (2, 8), (3,16), (4, 32), (5, 64)

4, 8, 16, 32 64

36) Fill out the table for the following function f(x) = -3x + 12

X	-2	0	4	6	10	14
Y	18	12	0	-6	-18	-30

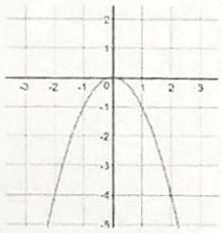
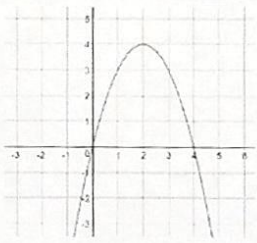
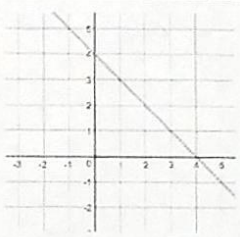
37) What is the domain of question number 33?

-2, 0, 4, 6, 10, 14

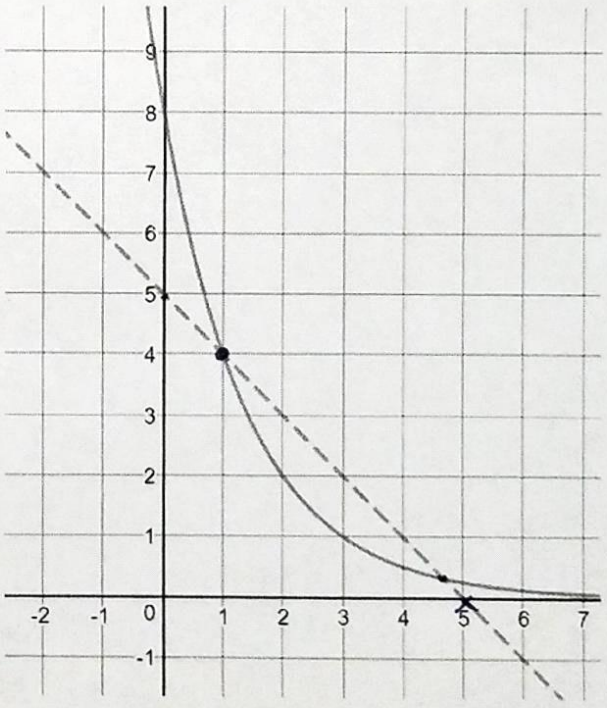
38) What is the range of question number 34?

18, 12, 0, -6 -18, -30

Determine if the following are even, odd or neither

39)  E	40)  N	41)  N
42) $y = -5x^3 + 4x$ O	43) $y = -5x^3 + 4$ N	44) $y = -5x^2 + 4$ E

Amanda (dotted) borrowed some money from her sibling and Derrick (solid) borrowed money from his sibling. Each sibling gave them different pay back methods



45) How much money did Amanda initially borrow?

$5

46) How much money did Derrick initially borrow?

$8

47) What is the rate of change for Amanda's plan?

-1

48) On which day do they both owe the same amount of money?

DAY 1 (OR DAY 4.75)

49) Who will pay off their debt first?

AMANDA