1. $x^2 = -12x - 35$

Name Key

Exponentials Quiz 1 Review Worksheet

1. Be able to identify an exponential function from a table.
2. Be able to write equations for linear and exponential functions from a table.
3. Be able to graph exponential functions and give the domain, range, and asymptote.
4. Be able to calculate the average rate of change.

Tell whether the ordered pairs satisfy an exponential function. Explain your answer.

1.

x	y
–4	1.5
–3	3
–2	6
–1	12

×2, ×2, ×2

Yes - multiplying by 2 every time you go up by 1

2.

x	y
1	1
2	2
3	6
4	24

No - not multiplying by the same amount

3.

x	y
–2	–2
–1	–10
0	–50
1	–250

×5, ×5, ×5

Yes - multiplying by 5 each time you go up by one

4. {(1,10), (2, 20), (3, 40), (4, 80)} (×2, ×2, ×2)

Yes - multiplying by 2 each time you go up by one

5. {(1,5), (2, 10), (3, 15), (4, 20)}

No - there's a constant rate of change (linear not exponential)

For 6-11,

1. Is it Linear or Exponential?

2. Write the Equation for the Table

6.

x	y
–4	16
–3	20
–2	24
–1	28

Linear $y = 4x + 32$

7.

x	y
-2	2/3
-1	2
0	6
1	18

Exponential $y = 6 \cdot 3^x$

8.

x	y
–2	100
–1	10
0	1
1	1/10

Exponential $y = 1 \cdot (\frac{1}{10})^x$

9.

x	y
–2	9
–1	18
0	27
1	36

Linear $y = 9x + 27$

10.

x	y
0	2
1	11
2	60.5
3	332.75

Exponential $y = 2(5.5)^x$

11.

x	y
2	6
3	10
4	14
5	18

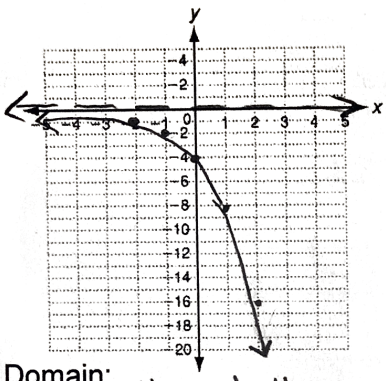
Linear $y = 4x - 2$

Name_____

Graph the Following Functions.

12. $y = -4(2)^x$

x	y
-2	-1
-1	-2
0	-4
1	-8
2	-16



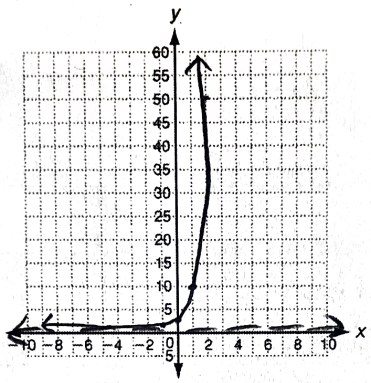
Domain: all real #s

Range: $y < 0$

Asymptote: $y = 0$

13. $y = 2(5)^x$

x	y
-2	2/25
-1	2/5
0	2
1	10
2	50



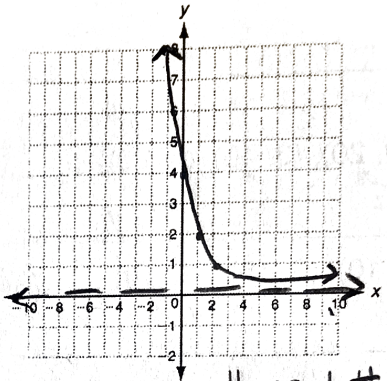
Domain: all real #s

Range: $y > 0$

Asymptote: $y = 0$

14. $y = 4\left(\frac{1}{2}\right)^x$

x	y
-2	16
-1	8
0	4
1	2
2	1



Domain: all real #s

Range: $y > 0$

Asymptote: $y = 0$

Equation

$f(x) = 4(2)^x$

Find the average rate of change on the interval $-1 \le x \le 1$

(-1, 2) (1, 8)

$\frac{8-2}{1-(-1)}$ $\frac{6}{2}$ = (3)

Find the average rate of change on the interval $2 \le x \le 4$

(2, 16) (4, 64)

64 − 16 = 48

$\frac{64-16}{4-2} = \frac{48}{2} = (24)$

Table

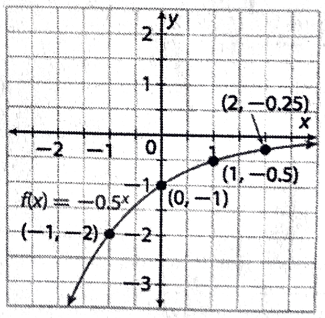
x	f(x)
0	5
1	10
2	20
3	40
4	80

Find the average rate of change on the interval $0 \le x \le 2$

(0, 5) (2, 20)

$\frac{20-5}{2-0} = \left(\frac{15}{2}\right)$

Graph



Find the average rate of change on the interval $-1 \le x \le 1$

$(-1, -2)$ $(1, -\frac{1}{2})$

$\frac{-2-(-\frac{1}{2})}{1-1}$ $\frac{-1.5}{-2} = \left(\frac{3}{4}\right)$ or (0.75)