

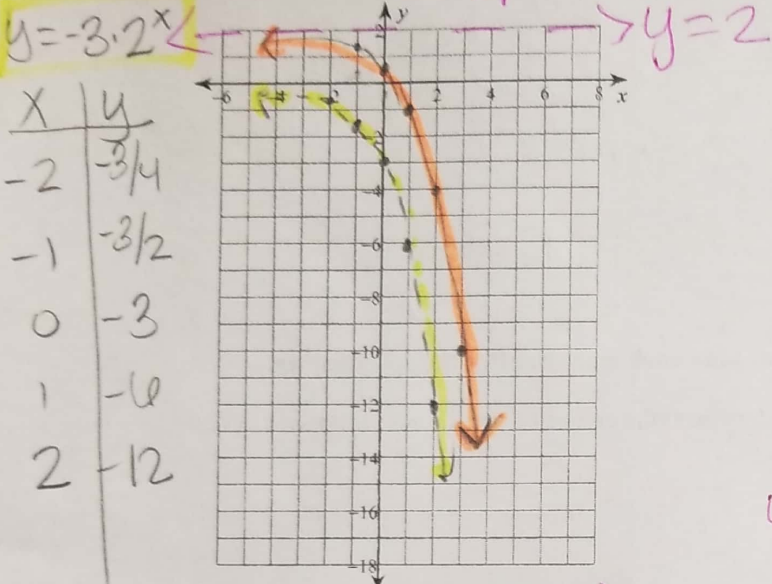
Graphing Exponential Functions w/ Transformations

Sketch the graph of each function.

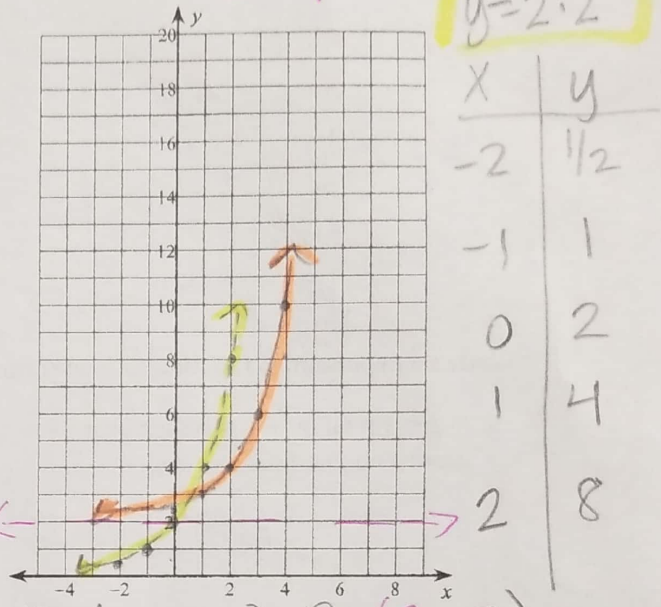
FINAL GRAPH

1) $y = -3 \cdot 2^{x-1} + 2$ *right 1 up 2*

2) $y = 2 \cdot 2^{x-2} + 2$ *up 2*



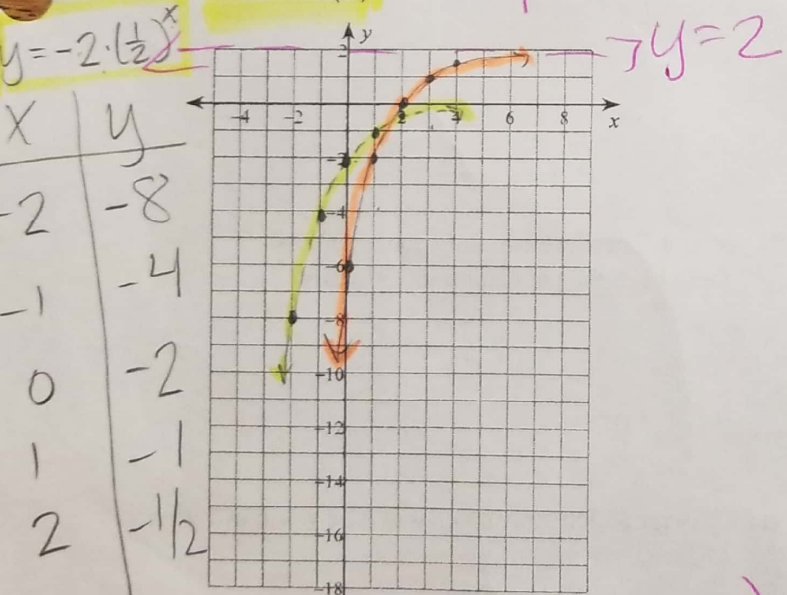
D: $(-\infty, \infty)$ R: $(-\infty, 2)$



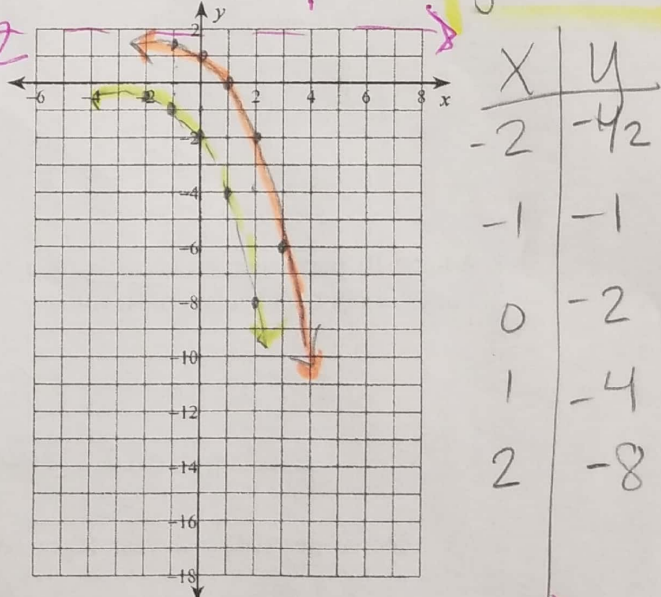
D: $(-\infty, \infty)$ R: $(2, \infty)$

3) $y = -2 \cdot \left(\frac{1}{2}\right)^x + 2$ *up 2*

4) $y = -2 \cdot 2^{x-1} + 2$ *up 2*



D: $(-\infty, \infty)$ R: $(-\infty, 2)$



D: $(-\infty, \infty)$ R: $(-\infty, 2)$

5) If interest is **compounded continuously** at 4.5% for 7 years, how much will a \$2000 investment be worth at the end of 7 years?

$$A = Pe^{rt}$$

$$A = 2000e^{(0.045 \cdot 7)}$$

$$A = 82740.52$$

6) Suppose \$5000 is put into an account that pays 4% **compounded continuously**. How much will be in the account after 3 years?

$$A = Pe^{rt}$$

$$A = 5000e^{(0.04 \cdot 3)}$$

$$A = 85637.48$$

Determine whether the function represents exponential growth or exponential decay. Then find the y-intercept.

1. $y = 8000(1.15)^x$

Growth
(0, 8000)

2. $y = 20(0.75)^x$

Decay
(0, 20)

3. $y = 15\left(\frac{1}{2}\right)^x$

Decay
(0, 15)

4. $f(x) = 6\left(\frac{5}{2}\right)^x$

Growth
(0, 6)

Write an exponential function to model each situation. Find each amount after the specified time.

5. A tree 3 ft tall ⁺grows 8% each year. How tall will the tree be at the end of 14 yr? Round the answer to the nearest hundredth.

$$A = 3(1 + .08)^{14}$$

$$A \approx 8.81 \text{ ft}$$

6. The price of a new home is \$126,000. The value of the home ⁺appreciates 2% each year. How much will the home be worth in 10 yr?

$$A = 126,000(1 + .02)^{10}$$

$$A \approx \$153,593.30$$

7. A butterfly population is ⁻decreasing at a rate of 0.82% per year. There are currently about 100,000 butterflies in the population. How many butterflies will there be in the population in 250 years?

$$A = 100,000(1 - .0082)^{250}$$

$$A \approx 12765 \text{ butterflies}$$

8. A car ⁻depreciates 10% each year. If you bought this car today for \$5000, how much will it be worth in 7 years?

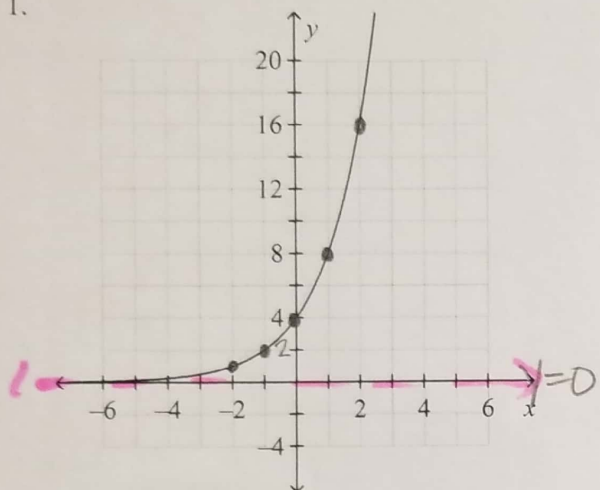
$$A = 5000(1 - .10)^7$$

$$A = \$2391.48$$

Algebra 2: (7.1-7.2) Quiz REVIEW
Answer Section

SHORT ANSWER

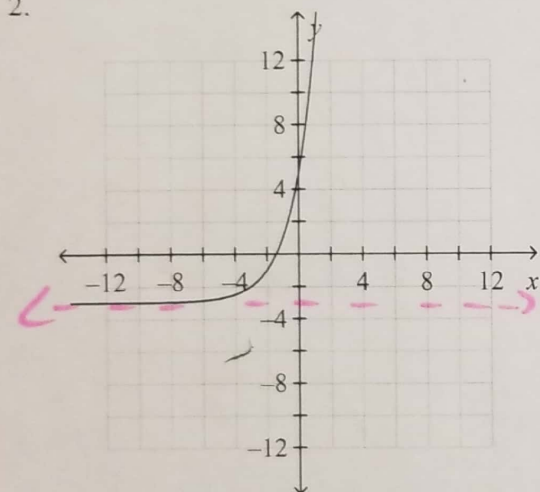
1.



$y = 0$
 $D: (-\infty, \infty)$
 $R: (0, \infty)$

X	$y = 4(2)^x$	y
-2	$4(2)^{-2}$	1
-1	$4(2)^{-1}$	2
0	$4(2)^0$	4
1	$4(2)^1$	8
2	$4(2)^2$	16

2.



$y = -3$
 $D: (-\infty, \infty)$
 $R: (-3, \infty)$

X	$y = 2(2)^x$	y
-2	$2(2)^{-2}$	$1/2$
-1	$2(2)^{-1}$	1
0	$2(2)^0$	2
1	$2(2)^1$	4
2	$2(2)^2$	8

Left 1
Down 3

3. $f(x) = 580(1.27)^x$

4. 9.025

5. \$1,923.23 $A = 1000e^{(0.04)(4)}$

6. $y = 2,700 \cdot 1.04^x$; about 4,323 people

7. \$4,369.52

8. \$9,152.6

9. exponential growth $5.2 > 1 = \text{growth}$

10. exponential decay $\frac{2}{3} < 1 = \text{decay}$

7. $A = 3800(1 + \frac{0.02}{4})^{7 \cdot 4}$

8. $A = 15,500(1 - .10)^5$