

8.1/8.2 Quiz Review

Name Key**Evaluate each function at the given value.**1) Evaluate each function at $x = 2$

1a. $y = 8 \cdot \left(\frac{1}{2}\right)^x$

$= 2$

1b. $y = 6 \cdot 3^x$

$= 54$

1c. $y = -3 \cdot 7^x$

$= -147$

2) Evaluate each function at $x = -1$

2a. $y = 8 \cdot \left(\frac{1}{2}\right)^x$

$= 16$

2b. $y = 6 \cdot 3^x$

$= 2$

2c. $y = -3 \cdot 7^x$

$= -.43$

Determine the transformation on the given function and identify the range.

3. $y = 2^x - 2$

down 2

Range: $y > -2$

4. $y = \frac{2^{x+5}}{3}$

left 5

Range: $y > 0$

5. $y = 3 \cdot \frac{1}{5}^x + 8$

up 8

Range: $y > 8$

6. $y = \frac{1}{8} \cdot 4^{x-9} - 7$

right 9

down 7

Range: $y > -7$

7. $y = 3 \cdot 6^{x+4} - 5$

left 4

down 5

Range: $y > -5$

8. $y = 9 \cdot \frac{1}{2}^{x-3} + 2$

right 3

up

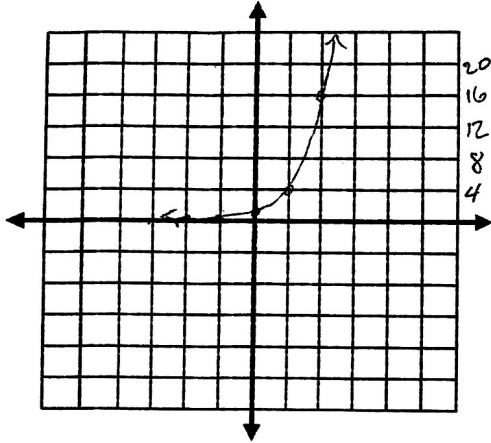
Range: $y > 2$

Graph the function and fill in the missing information.

9. $y = 4^x$

Exponential Growth or Decay?

| | | | | | |
|---|-----|-----|---|---|----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .06 | .25 | 1 | 4 | 16 |



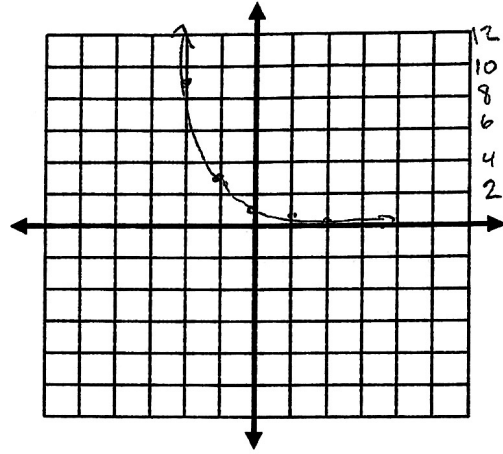
Domain: All reals Y-Intercept: (0, 1)

Range: $y > 0$

10. $y = \frac{1}{3}^x$

Exponential Growth or Decay?

| | | | | | |
|---|----|----|---|-----|-----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 9 | 3 | 1 | .33 | .11 |



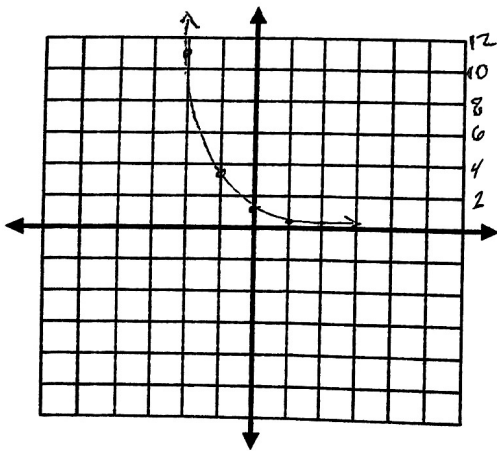
Domain: All reals Y-Intercept: (0, 1)

Range: $y > 0$

11. $y = 0.3^x$

Exponential Growth or Decay?

| | | | | | |
|---|------|-----|---|-----|-----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 11.1 | 3.3 | 1 | .03 | .09 |



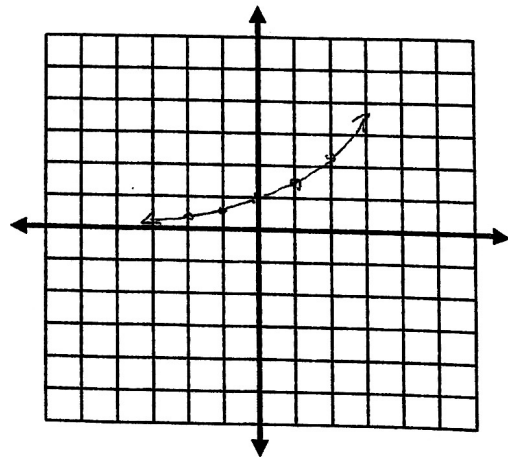
Domain: All reals Y-Intercept: (0, 1)

Range: $y > 0$

12. $y = 1.5^x$

Exponential Growth or Decay?

| | | | | | |
|---|-----|-----|---|-----|------|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .44 | .67 | 1 | 1.5 | 2.25 |



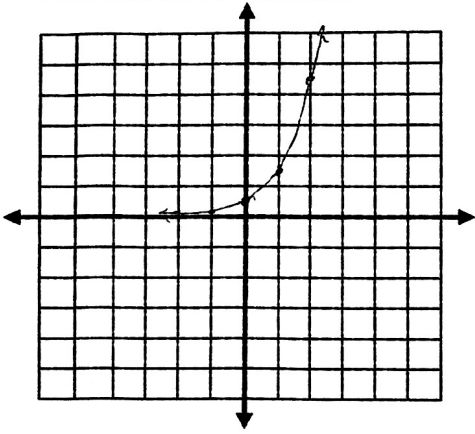
Domain: All reals Y-Intercept: (0, 1)

Range: $y > 0$

13. $y = \frac{1}{2} \cdot 3^x$

Exponential Growth or Decay?

| | | | | | |
|---|-----|-----|----|-----|-----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .06 | .17 | .5 | 1.5 | 4.5 |



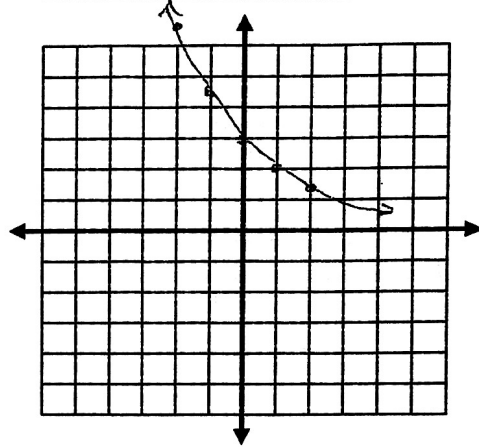
Domain: All reals Y-Intercept: (0, 0.5)

Range: $y > 0$

14. $y = 3 \cdot \frac{2^x}{3}$

Exponential Growth or Decay?

| | | | | | |
|---|------|-----|---|---|------|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 6.75 | 4.5 | 3 | 2 | 1.33 |



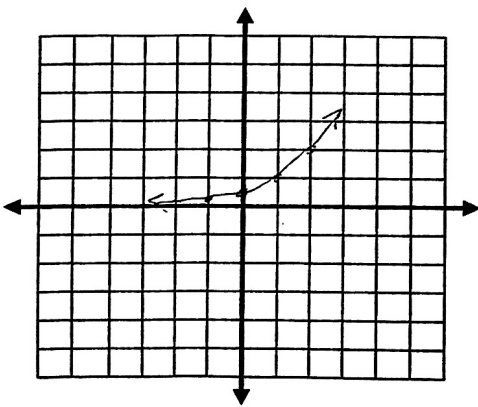
Domain: All reals Y-Intercept: (0, 3)

Range: $y > 0$

15. $y = 0.5 \cdot 2^x$

Exponential Growth or Decay?

| | | | | | |
|---|------|-----|----|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .125 | .25 | .5 | 1 | 2 |



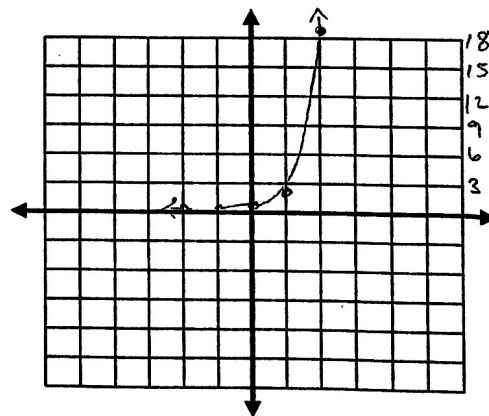
Domain: All reals Y-Intercept: (0, 0.5)

Range: $y > 0$

16. $y = 0.3 \cdot 8^x$

Exponential Growth or Decay?

| | | | | | |
|---|------|------|----|-----|------|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .004 | .037 | .3 | 2.4 | 19.2 |



Domain: All reals Y-Intercept: (0, 0.3)

Range: $y > 0$

Graph each function. Discuss the transformations of the graph.

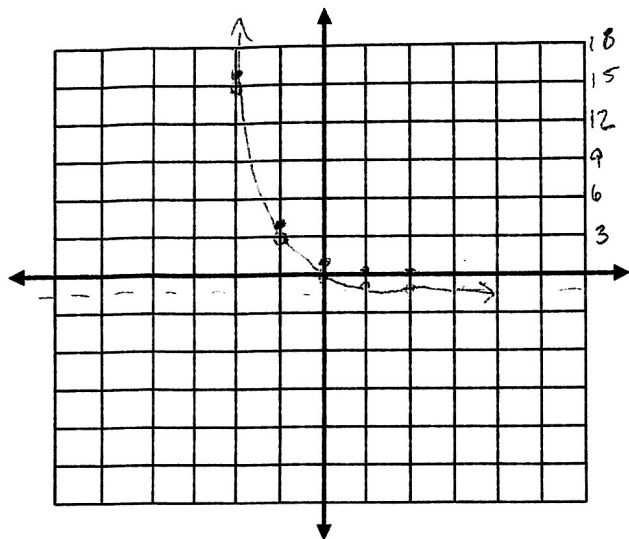
17. $y = \frac{1}{4}^x - 1$

equation without h or k:

$$y = \frac{1}{4}^x$$

Exponential Growth or Decay?

| | | | | | |
|---|----|----|---|-----|-------|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 16 | 4 | 1 | .25 | .0625 |



Domain: All reals

Range: $y > -1$

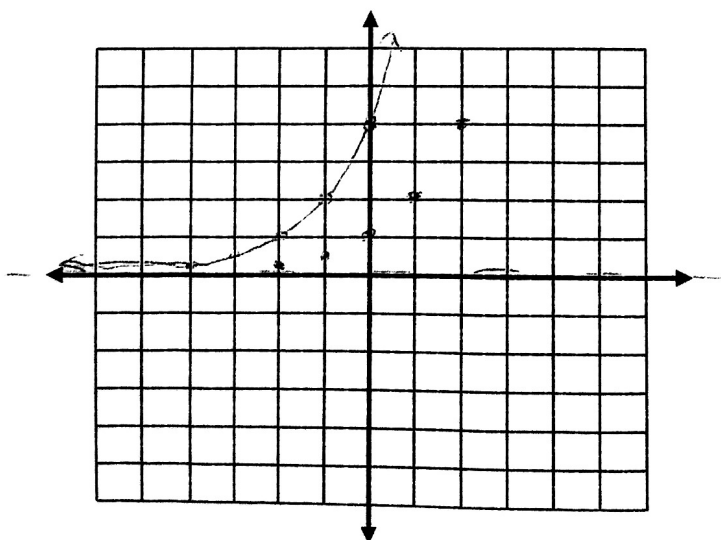
Transformations: down 1

18. $y = 2^{x+2}$

equation without h or k: $y = 2^x$

Exponential Growth or Decay?

| | | | | | |
|---|-----|----|---|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .25 | .5 | 1 | 2 | 4 |



Domain: All reals

Range: $y > 0$

Transformations: left + 2

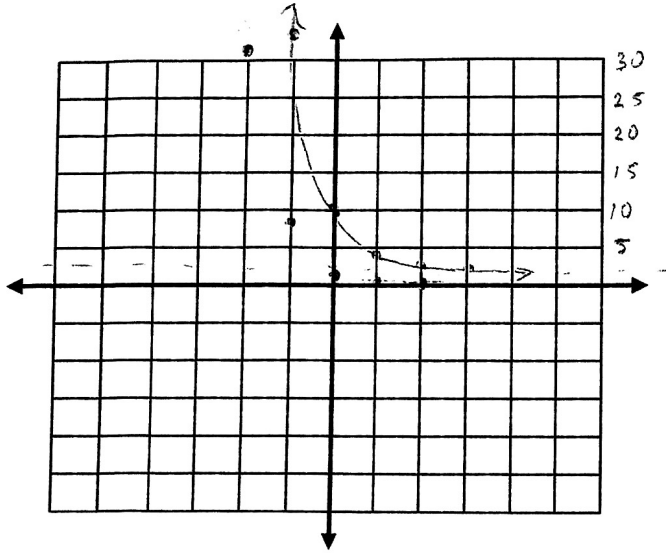
19. $y = 2 \cdot \frac{1}{4}^{x-1} + 2$

equation without h or k:

$$y = 2 \cdot \frac{1}{4}^x$$

Exponential Growth or Decay?

| | | | | | |
|---|----|----|---|----|------|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 32 | 8 | 2 | .5 | .125 |



Domain: All reals

Range: $y > 2$

Transformations:

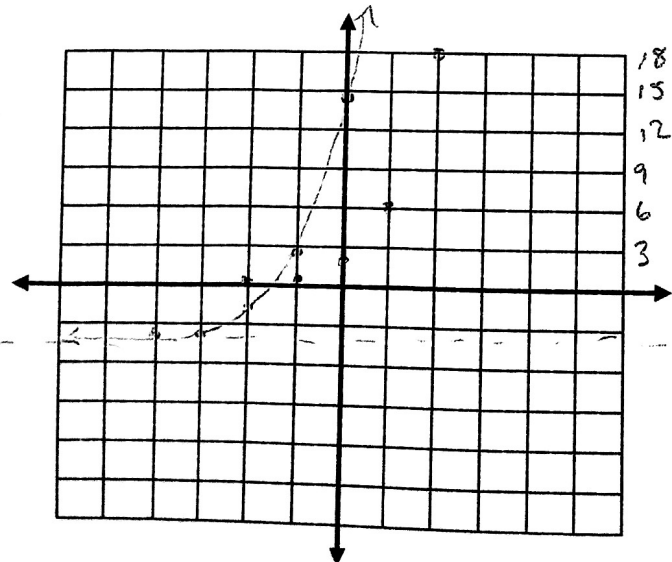
right 1
up 2

20. $y = 2 \cdot 3^{x+2} - 4$

equation without h or k: $y = 2 \cdot 3^x$

Exponential Growth or Decay?

| | | | | | |
|---|-----|-----|---|---|----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | .22 | .67 | 2 | 6 | 18 |



Domain: All reals

Range: $y > -4$

Transformations: left 2

down 4