

Unit 4 EOC Quick Review

Transformations

$a(b)^{x-h} + k$

parent function $b > 1$ G
 $b < 1$ D

Shrink < 1
 Stretch > 1
 Reflection -

Left +
 Right -

Asymptote $y =$
 Up
 down

Graphing and Characteristics

Domain: $(-\infty, \infty)$

Range: $(-2, 0)$

x intercepts: $(-1, 0)$

y intercepts: $x=0$ $(0, -1)$

Asymptote: $y = -2$

Increasing or Decreasing: $(-\infty, \infty)$

End Behavior: $x \rightarrow \infty y \rightarrow -2$

Increases

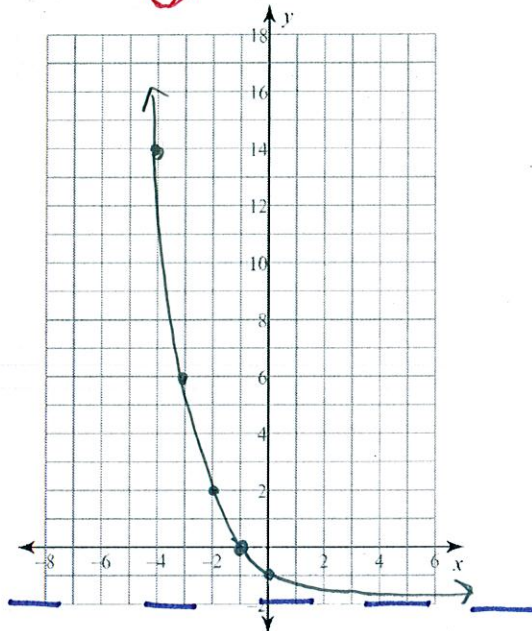
$x \rightarrow -\infty y \rightarrow \infty$

Decreases Increases

Rate of Change: $\frac{y_2 - y_1}{x_2 - x_1}$

Transformations: Left 1, Down 2, Stretch

$f(x) = 2 \cdot \left(\frac{1}{2}\right)^{x+1} - 2$



Applications

Growth

- b (base) is greater than 1
- Use adding in the financial formula when seeing a % sign

* - Double or triple

Decay

- b (base) is less than 1
- Use subtraction in the financial formula when seeing a % sign

* - half

Compound

- annually $n = 1$
- semi-annually $n = 2$
- quarterly $n = 4$
- monthly $n = 12$

* $A = P\left(1 \pm \frac{r}{n}\right)^{t \cdot n}$

* $y = a(b)^x$

Geometric Sequences

- Common ratio \rightarrow continual multiplication or division (multiplying by a fraction)
- Explicit Formula is used when finding specific term
- Used in word problems when it is mentioned that something has happen already (1st day, 1st hour, etc.)
- Recursive Formula is just a rule \rightarrow reminds us to keep multiplying - we can use to write an explicit formula

Explicit: $a_n = a_1(r)^{n-1}$

Recursive: $a_1 = \underline{\hspace{2cm}}$ $a_n = a_{n-1} * r$