

Review of Compound Interest

$$A = P(1+r)^t$$

accrued value (final) \rightarrow A \leftarrow time (periods)
 principal value (initial) \leftarrow P
 r \leftarrow rate 100% of interest

Ex 3: $2500(1.032)^6 = A \rightarrow \$3020.08 = A$

Ex 8: $\frac{4850}{(1.045)^6} = P \rightarrow A = \3724.29

Ex 12: $\frac{8000}{5000} = \frac{5000(1.05)^t}{5000} \rightarrow 1.6 = 1.05^t$ $t = 9.6$ years
 $\rightarrow (1.6) = \log_{1.05}(1.05)^t$

Graphing (Sketching) Exponential Functions

An exponential function might look like one of these forms:



if the base is > 1

Growth

$(y = 2^x \text{ or } y = 5^{x-1})$



if the base is < 1

Decay

$(y = 0.95^x \text{ or } y = 0.6^{x+3})$

1. find the y-intercept, $f(0)$ or $x=0$
2. find the limit when $x \rightarrow \infty$
(what happens on the right side)
3. find the limit when $x \rightarrow -\infty$
(what happens on the left side)

Ex 1: $y = 2^x$

1. $y = 2^0$

2. $y = 2^\infty$

$y = \infty$ on right

3. $y = 2^{-\infty}$

$y = 0$ on left



Ex 7: $y = -3(2)^x + 1$

1. $f(0) \rightarrow y = -3(2)^0 + 1$

$y = -3(1) + 1$

$y = -2$



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2. $f(\infty) \rightarrow y = -3(2)^\infty + 1$

$y = -\infty + 1$

$y = -\infty$ on right

3. $f(-\infty) \rightarrow y = -3(2)^{-\infty} + 1$

$y = -3 \cdot 0 + 1$

$y = 1$