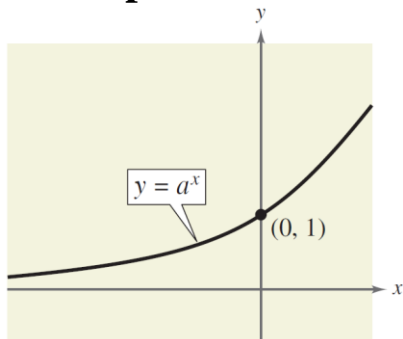


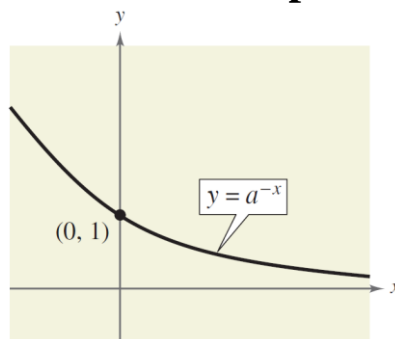
Pg. 218 3.1 – Exponential Functions and Their Graphs

Exponential Function: $f(x) = a^x$

Exponential Growth

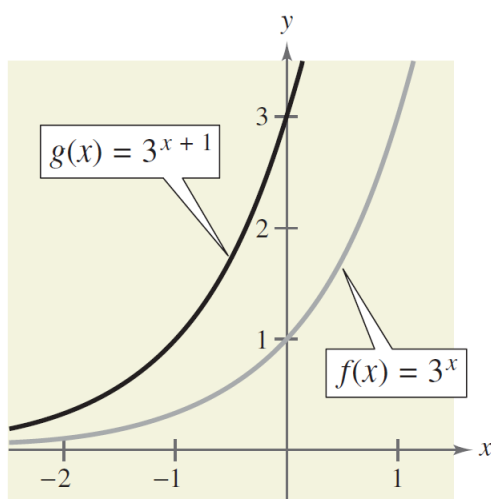


Exponential Decay

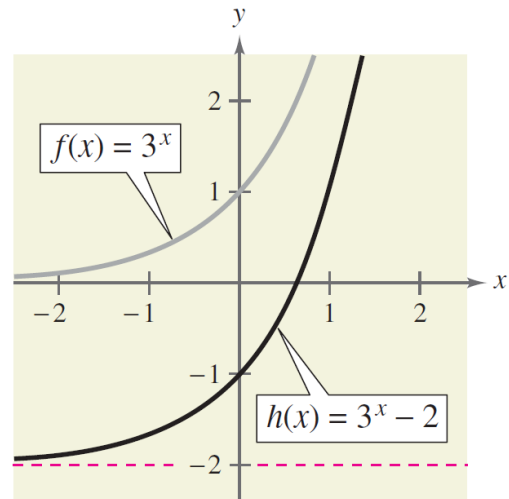


Transformations:

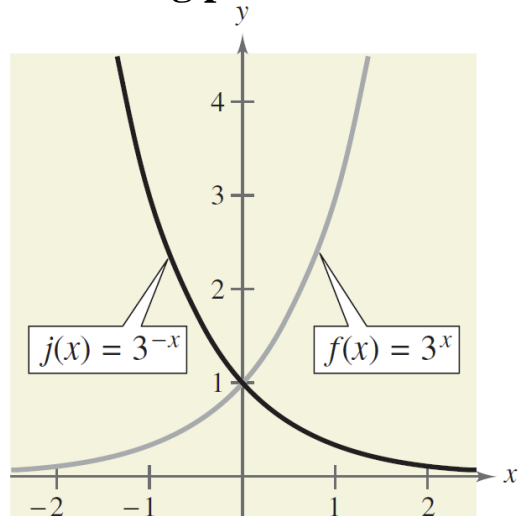
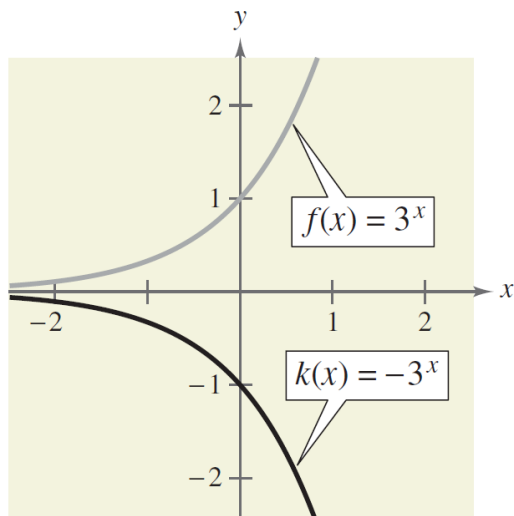
Horizontal Shift



Vertical Shift



Reflect over the horizontal asymptote. **Reflects over the line passing through the starting point.**



Natural Base: $e \approx 2.718$

Ex 1:

Solve.

a) $16 = 2^{x+2}$

b) $\left(\frac{1}{3}\right)^x = 81$

Formulas for Compound Interest

For n compounding per year: $A = P\left(1 + \frac{r}{n}\right)^{nt}$

For continuous compounding: $A = Pe^{rt}$

Ex 2:

On the day of a child's birth, a deposit of \$25,000 is made in a trust fund that pays 8.25% interest. Determine the balance in this account on the child's 26th birthday if the interest is compounded...

a) quarterly

b) monthly

c) continuously

Assignment 3.1

Pg. 226 Vocab #'s 3-5

Problem Set #'s 1-67 ODD

REQUIRED: Vocab, 7, 9, 17, 21, 27, 33, 45, 47, 53, 57, 63, 67