Graphs of common functions

Linear: $y = mx + c$, m=gradient, c = vertical intercept
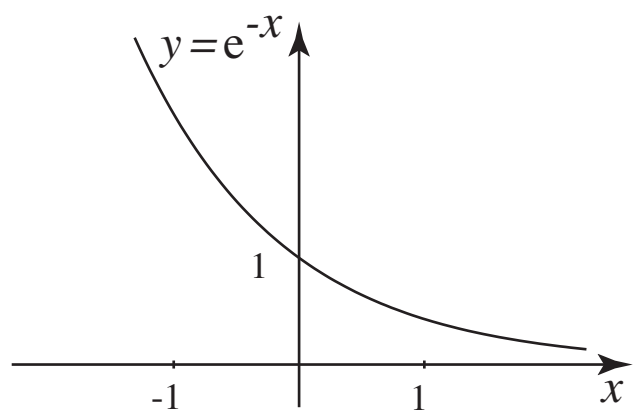

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$
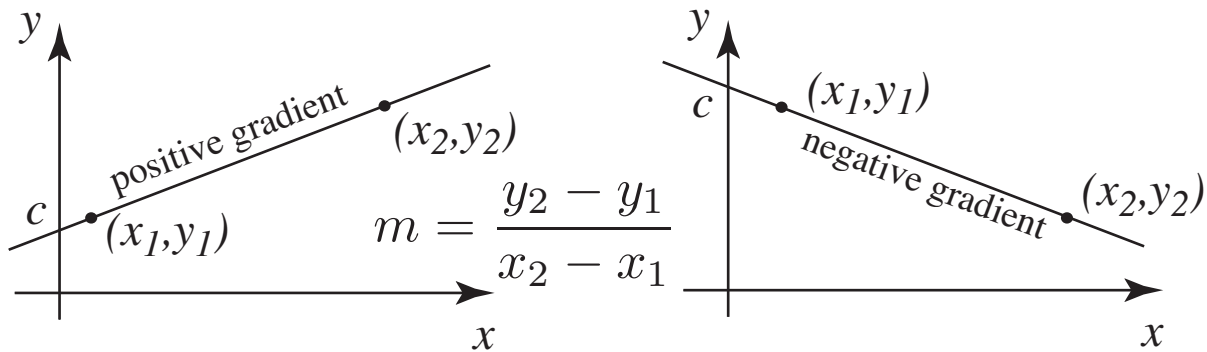
Exponential functions:

$e \approx 2.718$ is the exponential constant.
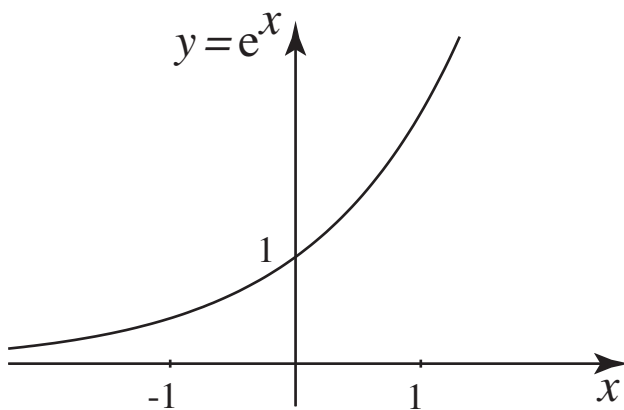
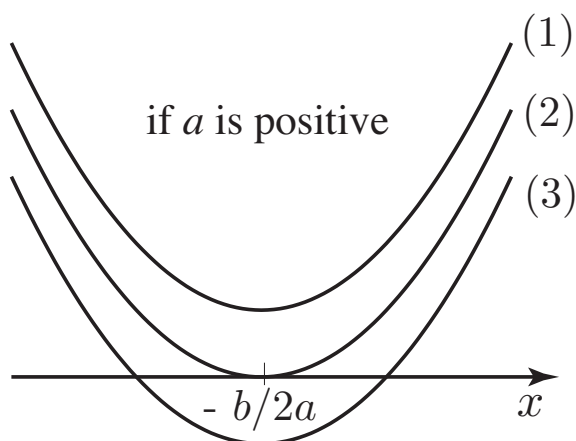Graph of $y = e^x$ showing exponential growth

Graph of $y = e^{-x}$ showing exponential decay
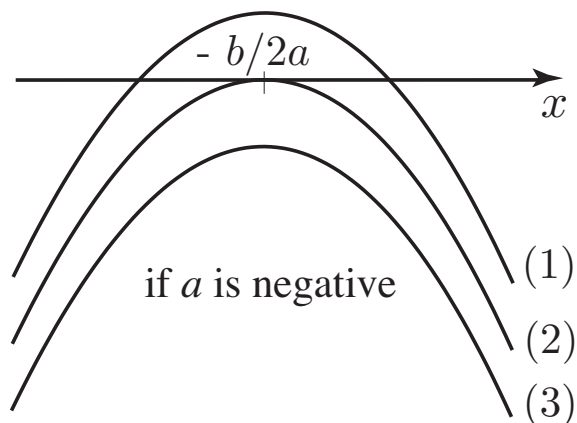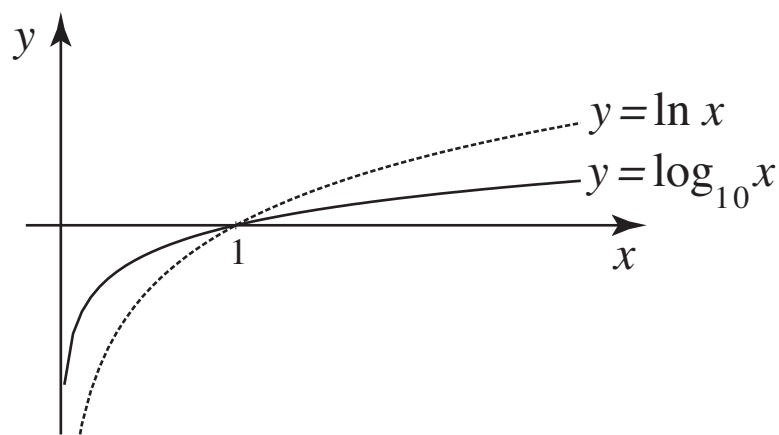
Quadratic functions: $y = ax^2 + bx + c$

if a is positive

$-b/2a$

x

$-b/2a$

if a is negative

x

$$(1) \quad b^2 - 4ac < 0$$
$$(2) \quad b^2 - 4ac = 0$$
$$(3) \quad b^2 - 4ac > 0$$

$$(1) \quad b^2 - 4ac > 0$$
$$(2) \quad b^2 - 4ac = 0$$
$$(3) \quad b^2 - 4ac < 0$$

Logarithmic functions:

y

$y = \ln x$

$y = \log_{10} x$

x

1

Graphs of $y = \ln x$ and $y = \log_{10} x$