Graphing Non-linear Equations

Question Bank

NOTE: Unless otherwise stated, the key/important features of a curve include (where applicable), x-intercepts, y-intercepts, and asymptotes. If you have learned what a turning point is, and know how to identify them include those as well.

1. For each of the following quadratic equations, draw their graph on a Cartesian plane and label all important features.

   a) $y = x^2 - 4$
   b) $y = x^2 + 1$
   c) $y = -x^2 + 5$
   d) $y = -x^2 - 2$
   e) $y = (x - 3)^2$
   f) $y = -(x + 2)^2$
   g) $y = x^2 - 4x$
   h) $y = x^2 + 3x$
   i) $y = -x^2 - 2x$
   j) $y = -x^2 + 4x$
   k) $y = x^2 + 4x + 3$
   l) $y = x^2 + 7x + 10$
   m) $y = x^2 - 4x - 5$
   n) $y = x^2 + 2x - 8$
   o) $y = -x^2 - 4x - 3$
   p) $y = -x^2 - x + 2$

2. For each of the following exponential equations, draw their graph on a Cartesian plane and label all important features.

   a) $y = 2^x$
   b) $y = 3^x$
   c) $y = -2^x$