CURVE TRACING

The following steps are useful in sketching an approximate shape of a curve:

a. Checking for symmetry: Symmetry of the curve can be determined as follows:

i. If all the exponents of y in the equation are even, the curve is symmetrical about the x-axis.

ii. If all the exponents of x in the equation are even, the curve is symmetrical about the y-axis.

iii. If all the exponents of both x and y are even, the curve is symmetrical about both the x and y axes.

iv. If swapping y and x in the equation doesn't change the curve's equation, then the curve is symmetrical about the line $y = x$.

v. If changing the signs of x and y in the equation doesn't alter the curve's equation, then the curve is symmetrical in opposite quadrants.

b. Finding dy/dx and setting it to zero to determine the point(s) where the tangent(s) is (are) parallel to the x-axis.

c. Finding the points where the curve intersects the x-axis and y-axis by substituting $y = 0$ and $x = 0$ respectively.

d. Examine the behavior of the curve as $x \to \infty$ or $x \to \infty$.