

FORMULAS:

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

Area of triangle: $A = \frac{1}{2}bh$

Area of a circle: $A = \pi r^2$

Area of a rectangle: $A = lw$

The vertex of a quadratic function is $(\frac{-b}{2a}, \frac{4ac-b^2}{4a})$ or $(\frac{-b}{2a}, f(\frac{-b}{2a}))$

The distance between two points (x_1, y_1) and (x_2, y_2) is

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

The equation of a circle is

$$(x - h)^2 + (y - k)^2 = r^2$$

The equation of an ellipse centered at the origin is

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

The standard forms of an equation of an hyperbola centered at the origin are:

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$

$$\frac{y^2}{b^2} - \frac{x^2}{a^2} = 1$$