

Some useful formulas:

$$a^2 + b^2 = c^2$$

$$y = mx + b$$

$$y - y_1 = m(x - x_1)$$

$$x^2 - y^2 = (x + y)(x - y)$$

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2)$$

$$x^2 + (a + b)x + ab = (x + a)(x + b)$$

$$acx^2 + (bc + ad)x + bd = (ax + b)(cx + d)$$

$$x^2 + 2xy + y^2 = (x + y)^2$$

$$x^2 - 2xy + y^2 = (x - y)^2$$

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

$$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$A_{\triangle} = \frac{1}{2}bh$$

$$A_{\square} = lw$$