MPM2D: Principles of Mathematics, Grade 10   EQUATIONS

Analytic Geometry

$y = mx + b$ slope/intercept form $Ax + By + C = 0$ standard form

$m = \dfrac{rise}{run} = \dfrac{y_2 - y_1}{x_2 - x_1}$ $c^2 = a^2 + b^2$, where c is the hypotenuse

$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $x^2 + y^2 = r^2$ $M(x, y) = \left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2} \right)$

Trigonometry

$\sin \theta = \dfrac{Opposite}{Hypotenuse}$ $\cos \theta = \dfrac{Adjacent}{Hypotenuse}$ $\tan \theta = \dfrac{Opposite}{Adjacent}$

$\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$ **OR** $\dfrac{\sin A}{a} = \dfrac{\sin B}{b} = \dfrac{\sin C}{c}$

$c^2 = a^2 + b^2 - 2ab \cos C$ **OR** $\cos C = \dfrac{a^2 + b^2 - c^2}{2ab}$

Quadratic Equations

$y = ax^2 + bx + c$ $y = a(x - h)^2 + k$ $y = a(x - s)(x - t)$

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