FMP 10 FORMULA SHEET

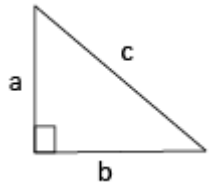
Sequence & Series

$t_n = t_1 + (n-1)d$ $\quad S_n = \frac{n}{2}(2t_1 + (n-1)d)$ $\quad S_n = \frac{n}{2}(t_1 + t_n)$

$t_n = t_1(r)^{(n-1)}$ $\quad S_n = \frac{(t_1((r)^n - 1))}{((r)-1)}$ $\quad S_n = \frac{((r)t_n - t_1)}{((r)-1)}$ $\quad S_\infty = \frac{t_1}{(1-(r))}$

Pythagorean Theorem

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



Trigonometric Ratios

$$\sin A = \frac{opposite}{hypotenuse} \qquad \cos A = \frac{adjacent}{hypotenuse} \qquad \tan A = \frac{opposite}{adjacent}$$

Exponent Laws

Exponent Law	Rule
Product of Powers	$x^m \times x^n = x^{m+n}$
Quotient of Powers	$\frac{x^m}{x^n} = x^{m-n}$
Power of a Power	$(x^m)^n = x^{m \times n}$
Power of a Product	$(xy)^m = x^m y^m$
Power of a Quotient	$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$
Zero Exponent	$x^0 = 1$
Negative Exponent	$x^{-m} = \frac{1}{x^m}$
Fractional Exponent	$x^{\frac{m}{n}} = \sqrt[n]{x^m}$ or $\left(\sqrt[n]{x}\right)^m$

Linear Functions

$$slope = \frac{rise}{run} \quad = \quad m = \frac{y_2 - y_1}{x_2 - x_1} \quad = \quad slope = \frac{\Delta y}{\Delta x}$$

slope-intercept form $y = mx + b$

general form $Ax + By + C = 0$ slope-point form $(y - y_1) = m(x - x_1)$

standard form $Ax + By = C$