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**Key Nigerian Mathematics Formulas**

- **Arithmetic & Finance:**

- Simple Interest:

$$SI = \frac{PRT}{100}$$

- Compound Interest:

$$A = P \left(1 + \frac{r}{100}\right)^t$$

- Profit Percentage:

$$\frac{\text{Profit}}{\text{Cost Price}} \times 100$$

- **Algebra:**

- Quadratic Formula:

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

- Difference of Squares:

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

- Perfect Square:

$$(a \pm b)^2 = a^2 \pm 2ab + b^2$$

- **Geometry & Mensuration:**

- Area of Circle:

$$\pi r^2$$

- Circumference:

$$2\pi r$$

- Area of Triangle:

$$\frac{1}{2} \times \text{base} \times \text{height}$$

- Area of Trapezium:

$$\frac{1}{2}(a + b)h$$

- Volume of Cylinder:

$$\pi r^2 h$$

- Pythagoras Theorem:

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

- **Trigonometry:**

$$\sin \theta = \frac{\text{Opp}}{\text{Hyp}}$$

$$\cos \theta = \frac{\text{Adj}}{\text{Hyp}}$$

$$\tan \theta = \frac{\text{Opp}}{\text{Adj}}$$

- **Coordinate Geometry:**

- Distance Formula:

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

- Midpoint:

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

- Slope:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$