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Consistency Matters

MYP Mathematics

One-Page Formula Summary

AREA

Area of parallelogram: $A = bh$

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

Area of trapezium: $A = \frac{1}{2}(a + b)h$

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

Circumference of circle: $C = 2\pi r$

LINEAR FUNCTIONS

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

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

Straight line: $y = mx + c$ and $ax + by + d = 0$

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

PYTHAGORAS & TRIG

Pythagoras' Theorem: $c^2 = a^2 + b^2$

Trigonometric identity: $\tan \theta = \frac{\sin \theta}{\cos \theta}$

$\sin B = \frac{\text{opp}}{\text{hyp}}$

$\cos B = \frac{\text{adj}}{\text{hyp}}$

$\tan B = \frac{\text{opp}}{\text{adj}}$

PROBABILITY

$P(A) = \frac{\text{outcomes in } A}{\text{total outcomes}}$

Complementary events: $P(A') = 1 - P(A)$

Mutually exclusive events: $P(A \cap B) = 0$

Combined events:

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

SURFACE AREA & VOLUME

Cylinder curved surface area: $A = 2\pi rh$

Volume of cylinder: $V = \pi r^2 h$

Surface area of sphere: $A = 4\pi r^2$

Volume of sphere: $V = \frac{4}{3}\pi r^3$

Cone curved surface area: $A = \pi rl$

Volume of cone: $V = \frac{1}{3}\pi r^2 h$

Volume of pyramid: $V = \frac{1}{3}Ah$

Volume of cuboid: $V = lwh$

Volume of prism: $V = Ah$

QUADRATIC FUNCTIONS

For $f(x) = ax^2 + bx + c$:

Axis of symmetry: $x = -\frac{b}{2a}$

Solutions of $ax^2 + bx + c = 0$:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, \quad a \neq 0$$

Discriminant: $\Delta = b^2 - 4ac$

STATISTICS

Arithmetic mean: $\frac{\text{sum of values}}{\text{number of values}}$

Interquartile range: $\text{IQR} = Q_3 - Q_1$

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For revision and learning. Use the official IB formula booklet in examinations where required.

