

APPLICATIONS OF MATHEMATICS 12

FORMULAE

Geometry:

Triangle: $\text{Area} = \frac{1}{2}bh$

Trapezoid: $\text{Area} = \frac{1}{2}(b_1 + b_2) \times h$

Circle: $\text{Area} = \pi r^2, C = 2\pi r = \pi d$

Sphere: $SA = 4\pi r^2, V = \frac{4}{3}\pi r^3$

Cylinder: $SA = 2\pi r^2 + 2\pi rh, V = \pi r^2 h$

Cone: $SA = \pi rs + \pi r^2, V = \frac{1}{3}\pi r^2 h$

Volume of pyramid: $V = \frac{1}{3}(\text{Base Area})(\text{Height})$

Volume of prism: $V = (\text{Base Area})(\text{Height})$

Interest:

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

$$I = Prt$$

Trigonometry:

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc}$$

Probability:

$$P(\bar{A}) = 1 - P(A)$$

$$P(A \text{ and } B) = P(A) \times P(B)$$

$$P(A \text{ and } B) = P(A) \times P(B | A)$$

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$