Formulae 1
For Memorising

I know this ☺ ☐
I'm working on it ☐

Geometry

area of circle —— πr^2

circumference of circle —— $2\pi r$ or πd

area of triangle —— $\frac{1}{2} \times base \times height$

volume of prism —— area of cross section $\times$ length

area of rectangle —— $length \times width$

volume of pyramid —— $\frac{1}{3}(lwh)$

area of parallelogram —— $base \times height$

sum of interior angles of polygon —— $(n-2) \times 180°$

area of trapezium —— $\frac{1}{2}(a+b) \times h$

Pythagoras Theorem —— $a^2 + b^2 = c^2$

diagonal of a cuboid —— $length^2 \times height^2 \times width^2$

Probability
(events A and B)

Mutually exclusive events —— $P(A \text{ or } B) = P(A) + P(B)$ also $P(A) + P(\text{not } A) = 1$

Not mutually exclusive events —— $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

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

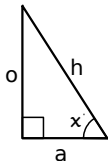Dependent / conditional events —— $P(A \text{ and } B) = P(A) \times P(B \text{ given } A)$

Trigonometry

SOHCAHTOA

$\sin x = \frac{o}{h}$

$\cos x = \frac{a}{h}$

$\tan x = \frac{o}{a}$
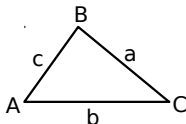
area of a triangle —— $\frac{1}{2} ab \sin C$

Sine rule

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

or

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

cosine rule

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

Algebra

Formula for solving quadratic equation

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

Formula for geometric progression

$T_n = a r^{(n-1)}$

Definitions and Formulae 2

I know this ☺ ☐
I'm working on it ☐

Compound units

Distance
Speed
Time

$$\frac{D}{S \mid T}$$

Mass
Density
Volume

$$\frac{M}{D \mid V}$$

Definitions

π = "pi" ≈ 3.142

r = radius of circle

h = height

l = length

w = width

v = final velocity (speed) (m/s)

u = initial velocity (speed) (m/s)

a = acceleration (m/s²)

t = time (s)

s = displacement (distance) (m)

Formulae given (when necessary) on exam paper

Volume of cone ——— $\frac{1}{3}\pi r^2 h$

Volume of sphere ——— $\frac{4}{3}\pi r^3$

Curved surface area of a cone ——— $\pi r l$

Surface area of sphere ——— $4\pi r^2$

Kinematics ——— $v = u + at$ $\qquad v^2 = u^2 + 2as$ $\qquad s = ut + \frac{1}{2}at^2$