W.N.C.P. Grade 10 Mathematics Formula Sheet

Pythagorean Theorem

$a^2 + b^2 = c^2$, where *c* is the length of the hypotenuse

Linear Relations

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

Trigonometry

$$\sin\theta = \frac{opp}{hyp}$$

$$\cos\theta = \frac{adj}{hyp}$$

$$\tan\theta = \frac{opp}{adj}$$

Area and Volume: for ALL calculations on the test using π, *always use* **π = 3.14**

Circumference and Area of a **circle** with radius *r*

$C = 2\pi r$ $A = \pi r^2$

Area of a **triangle** with base *b* and height *h*:

$A = \frac{1}{2}bh$

Volume of **Prism**:

V = area of base x height of the prism

Volume of **Pyramid**:

V = $\frac{1}{3}$ × (the volume of the enclosing prism)

Volume of **Cylinder** with height *h* and radius *r*:

$V = \pi r^2 h$

Volume of **Sphere** with radius *r*:

$V = \frac{4}{3}\pi r^3$

Surface Area of **Cylinder** with height *h* and radius *r*:

$SA = 2\pi rh + 2\pi r^2$

Surface Area of a **Cone** with radius *r* and slant height *h*:

$SA = \pi rs + \pi r^2$

Surface Area of **Sphere** with radius *r*:

$SA = 4\pi r^2$