Definitions and Formulas for Multi-Subject: Teachers of Middle Childhood (Grade 5–Grade 9) Part Two: Mathematics

TRIGONOMETRY

$\sin A = \dfrac{\text{opposite}}{\text{hypotenuse}}$

$\cos A = \dfrac{\text{adjacent}}{\text{hypotenuse}}$

$\tan A = \dfrac{\text{opposite}}{\text{adjacent}}$

Law of Sines: $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Law of Cosines: $a^2 = b^2 + c^2 - 2bc \cos A$

Area of a Triangle: $K = \dfrac{1}{2}ab\sin C$

GEOMETRY

Area of a Triangle: $A = \dfrac{1}{2}ab$

Area of a Trapezoid: $A = \dfrac{1}{2}h(b_1 + b_2)$

Lateral Area of a Right Circular Cylinder: $L = 2\pi rh$

Lateral Area of a Right Circular Cone: $L = \pi rl$ where l is the slant height

Surface Area of a Rectangular Prism: $SA = 2lw + 2hw + 2lh$

Surface Area of a Cylinder: $SA = 2\pi r^2 + 2\pi rh$

Surface Area of a Sphere: $SA = 4\pi r^2$

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

Volume of a Pyramid: $V = \dfrac{1}{3}Bh$ where B is the area of the base

Volume of a Right Circular Cone: $V = \dfrac{1}{3}\pi r^2 h$

Volume of a Sphere: $V = \dfrac{4}{3}\pi r^3$

COORDINATE GEOMETRY

Slope of a Line: $m = \dfrac{\Delta y}{\Delta x} = \dfrac{y_2 - y_1}{x_2 - x_1}$

Sum of a Finite Arithmetic Series: $S_n = \dfrac{n(a_1 + a_n)}{2}$

Sum of a Finite Geometric Series: $S_n = \dfrac{a_1(1 - r^n)}{1 - r}$

Normal Curve
Standard Distribution

19.1% 19.1%

15.0%   15.0%

0.1% 0.5%   9.2%   9.2%   0.5% 0.1%

4.4%   4.4%

1.7%   1.7%

−3   −2.5   −2   −1.5   −1   −0.5   0   0.5   1   1.5   2.0   2.5   3