Georgia Milestones Assessment System

Analytic Geometry Formula Sheet

Below are the formulas you may find useful as you take the test. However, you may find that you do not need to use all of the formulas. You may refer to this formula sheet as often as needed.

Quadratic Formulas

Quadratic Equations

Standard Form: $y = ax^2 + bx + c$

Vertex Form: $y = a(x - h)^2 + k$

Quadratic Formula

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

Average Rate of Change

The change in the y-value divided by the change in the x-value for two distinct points on a graph.

Geometry Formulas

Pythagorean Theorem

$a^2 + b^2 = c^2$

Trigonometric Relationships

$\sin\theta = \frac{opp}{hyp}$; $\cos\theta = \frac{adj}{hyp}$; $\tan\theta = \frac{opp}{adj}$

Equation of a Circle

$(x - h)^2 + (y - k)^2 = r^2$

Circumference of a Circle

$C = \pi d$ or $C = 2\pi r$

$\pi \approx 3.14$

Arc Length of a Circle

Arc Length $= \frac{2\pi r\theta}{360}$

Area of a Circle

$A = \pi r^2$

Area of a Sector of a Circle

$$\text{Area of Sector} = \frac{\pi r^2\theta}{360}$$

Volume

Cylinder $V = \pi r^2 h$

Pyramid $V = \frac{1}{3}Bh$

Cone $V = \frac{1}{3}\pi r^2 h$

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

Statistics Formulas

Conditional Probability

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

Multiplication Rule for Independent Events

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

Addition Rule

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

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