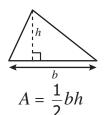
Algebra II Formula Sheet 2009 Mathematics Standards of Learning

Geometric Formulas:



$$p = 4s$$

$$A = s^{2}$$

$$p = 2l + 2w$$

$$A = lw$$

$$a = b$$

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

Quadratic Formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
, where $ax^2 + bx + c = 0$ and $a \ne 0$

Statistics Formula:

Given:

- x represents an element of the data set,
- μ represents the mean of the data set, and
- σ represents the standard deviation of the data set

z-score
$$(z) = \frac{x - \mu}{\sigma}$$

Permutations and Combinations Formulas:

If n and r are positive integers and $n \ge r$,

$$n^P r = \frac{n!}{(n-r)!}$$

$$n^C r = \frac{n!}{r!(n-r)!}$$

Sequence and Series Formulas:

Given:

 a_n represents the value of n^{th} term

 S_n represents the sum of first n terms

 S_{∞} represents the sum of an infinite geometric series

r represents the common ratio

d represents the common difference

Arithmetic

Geometric

$$a_{n} = a_{1} + (n-1)d a_{n} = a_{1}r^{n-1}$$

$$a_{n} = a_{n-1} + d a_{n} = a_{n-1} \cdot r$$

$$S_{n} = \frac{n}{2}(a_{1} + a_{n}) S_{n} = \frac{a_{1}(1 - r^{n})}{(1 - r)}, r \neq 1$$

$$S_{n} = \frac{n}{2}[2a_{1} + (n-1)d] S_{\infty} = \frac{a_{1}}{(1 - r)}, |r| < 1$$

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