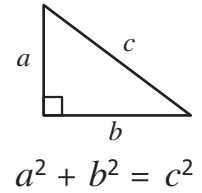
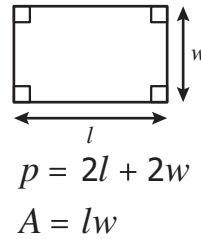
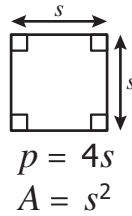
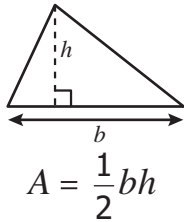


Algebra II Formula Sheet

2009 Mathematics Standards of Learning

Geometric Formulas:



Quadratic Formula:

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

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

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

Permutations and Combinations Formulas:

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

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

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

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

$$a_n = a_1 + (n-1)d$$

$$a_n = a_{n-1} + d$$

$$S_n = \frac{n}{2}(a_1 + a_n)$$

$$S_n = \frac{n}{2}[2a_1 + (n-1)d]$$

Geometric

$$a_n = a_1 r^{n-1}$$

$$a_n = a_{n-1} \cdot r$$

$$S_n = \frac{a_1(1-r^n)}{(1-r)}, r \neq 1$$

$$S_\infty = \frac{a_1}{(1-r)}, |r| < 1$$