

## Mathematics I Formula Sheet

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Below are the formulas you may find useful as you work the problems. However, some of the formulas may not be used. You may refer to this page as you take the test.

### Area

Rectangle and Parallelogram  $A = bh$

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

Circle  $A = \pi r^2$

Trapezoid  $A = \frac{1}{2}(h)(b_1 + b_2)$

### Circumference

$C = \pi d$   $\pi \approx 3.14$

### Volume

Rectangular Prism/Cylinder  $V = Bh$

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

### Surface Area

Rectangular Prism  $SA = 2lw + 2wh + 2lh$

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

### Pythagorean Theorem

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

### Mean Absolute Deviation

$$\frac{\sum_{i=1}^N |x_i - \bar{x}|}{N}$$

the average of the absolute deviations from the mean for a set of data

### Expected Value

$$E(x) = \sum_{i=1}^n x_i p(x_i)$$

the sum of each outcome multiplied by its probability of occurrence

### Permutations

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

### Combinations

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

### Interquartile Range

the difference between the first quartile and third quartile of a set of data