



**Student Academic Resource Center**  
**CLAST Math Formula Sheet**  
**DO NOT bring this formula sheet to the exam.**

Arithmetic

**Word Problems with percents:**

1.  $\text{is/of} = \%/100$
2.  $(100) \times (\text{difference/original})$
3. Exponents:  
If you're *multiplying* the expression, then ADD the exponents  
If you're *dividing* the expression, then SUBTRACT the exponents
4. Expanded Notation:

$$\overline{10^3} \quad \overline{10^2} \quad \overline{10^1} \quad \overline{10^0} \quad \cdot \quad \overline{10^{-1}} \quad \overline{10^{-2}} \quad \overline{10^{-3}} \quad \overline{10^{-4}}$$

Geometry

⇒ **Pythagorean Theorem:**

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

⇒ **Geometric Shapes:**

Units in Geometry:

Distance:

- 1-dimensional
- cm, ft, m, km, etc...

Area:

- 2-dimensional
- $\text{cm}^2, \text{m}^2, \text{ft}^2, \text{km}^2, \text{etc...}$

Volume:

- 3-dimensional
- $\text{cm}^3, \text{m}^3, \text{ft}^3, \text{km}^3, \text{etc...}$
- Liters, gallons, quarts, etc...

Circle:

Area:

$$A = \pi \times r^2$$

Circumference:

$$C = 2 \times \pi \times r$$

r = radius ( $\frac{1}{2}$  the diameter)

### Triangle:

Area:  $A = \frac{1}{2} \times b \times h$

b = base of the triangle, h = height

### Rectangle:

Area:  $A = L \times W$

Perimeter:  $P = 2 \times L + 2 \times W$

L = Length of rectangle, W = width

### Square: (a special case of a rectangle where the length = width)

Area:  $A = s^2$

Perimeter:  $P = 4 \times s$

s = the length of the side of a square

### Rectangular Solid:

Volume:  $V = L \times W \times H$

Surface Area:  $S.A. = 2 \times (L \times W) + 2 \times (L \times H) + 2 \times (W \times H)$

### Right Circular Cylinder:

Volume:  $V = \pi \times r^2 \times h$

### Right Circular Cone:

Volume:  $V = \frac{1}{3} \times \pi \times r^2 \times h$

### Sphere:

Volume:  $V = \frac{4}{3} \times \pi \times r^3$

### Angle Measurements:

- Supplementary Angles =  $180^\circ$
- Complementary Angles =  $90^\circ$
- Vertical Angles are equal
- Sum of Angles in a Triangle:  $180^\circ$
- Sum of Angles in a Square:  $360^\circ$

### Algebra:

#### ⇒ Order of Operations:

**P**arenthesis

**E**xponents

**M**ultiply

**D**ivide

**A**dd

**S**ubtract

⇒ **Quadratic Equation:**

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

## Statistics:

⇒ **Mean, Median, Mode:**

*Mean* is the average

*Median* is the number in the middle (from smallest to largest)

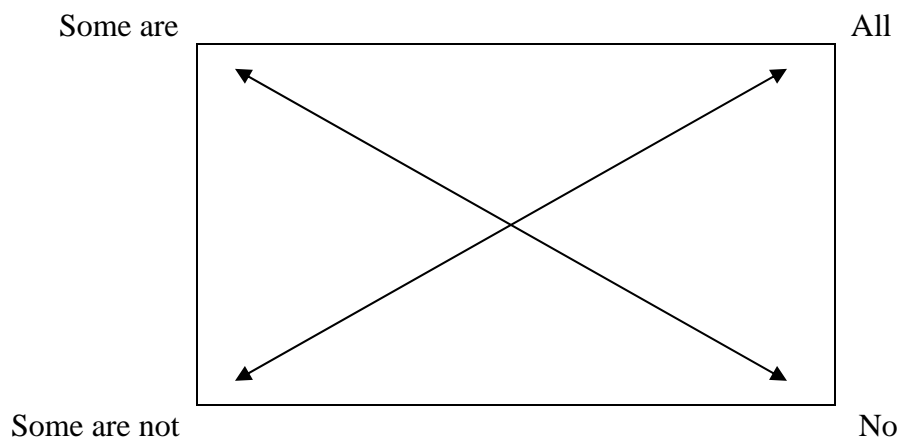
*Mode* is the number that appears most frequently

## Logic:

⇒ **Negations:** Where p and q are symbolic representations of statements

Statement	Negation
1. p	1. not p
2. not p	2. p
3. p and q	3. (not p) or (not q)
4. p or q	4. (not p) and (not q)
5. if p, then q	5. (p) and (not q)

**Negation Box:** To find the negation follow the arrows diagonally across the box.



Created by Gabrielle Gibson, CLAST Math workshop instructor and tutor

Edited by Alicia Orta, CLAST Math workshop instructor and tutor

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