Illinois Licensure Testing System Study Guide
Test of Academic Proficiency

MATHEMATICS DEFINITIONS AND FORMULAS

Definitions

$=$	is equal to	$\leq$	is less than or equal to	$\overline{AB}$	line segment AB
$\neq$	is not equal to	π	≈ 3.14	$\overleftrightarrow{AB}$	line AB
$>$	is greater than	$\angle$	angle	AB	length of $\overline{AB}$
$<$	is less than	$\llcorner$	right angle	$\frac{a}{b}$ or $a : b$	ratio of a to b
$\geq$	is greater than or equal to				

Abbreviations for Units of Measurement

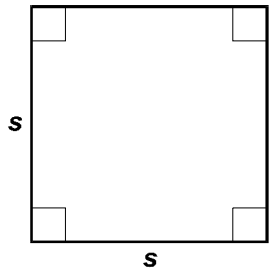
	U.S. Customary		Metric System			Time		
Distance	in.	inch	**Distance**	m	meter	**Time**	sec.	second
	ft.	foot		km	kilometer		min.	minute
	mi.	mile		cm	centimeter		hr.	hour
				mm	millimeter			
Volume	gal.	gallon	**Volume**	L	liter			
	qt.	quart		mL	milliliter			
	oz.	fluid ounce		cc	cubic centimeter			
Weight	lb.	pound	**Mass**	g	gram			
	oz.	ounce		kg	kilogram			
				mg	milligram			
Temperature	°F	degree Fahrenheit	**Temperature**	°C	degree Celsius			
				K	kelvin			
Speed	mph	miles per hour						

Conversions for Units of Measurement

U.S. Customary		Metric System	
Length	12 inches = 1 foot 3 feet = 1 yard 5280 feet = 1 mile	**Length**	10 millimeters = 1 centimeter 100 centimeters = 1 meter 1000 meters = 1 kilometer
Volume (liquid)	8 ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon	**Volume**	1000 milliliters = 1 liter 1000 liters = 1 kiloliter
Weight	16 ounces = 1 pound 2000 pounds = 1 ton	**Weight**	1000 milligrams = 1 gram 1000 grams = 1 kilogram

Geometric Figures

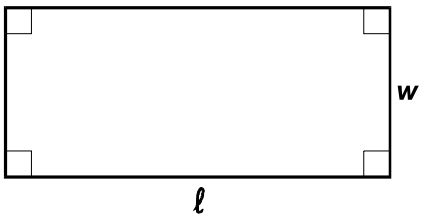
Square



Area = s^2

Perimeter = $4s$

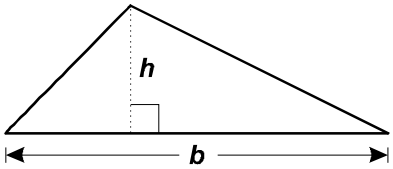
Rectangle



Area = ℓw

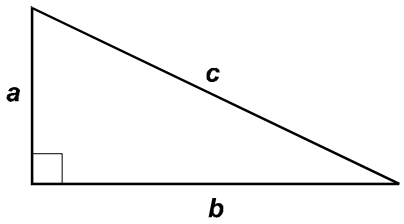
Perimeter = $2\ell + 2w$

Triangle



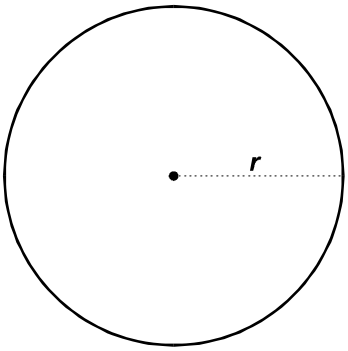
Area = $\frac{1}{2}bh$

Right triangle



Pythagorean formula: $c^2 = a^2 + b^2$

Circle

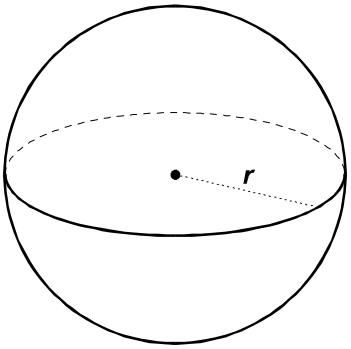


Area = πr^2

Circumference = $2\pi r$

Diameter = $2r$

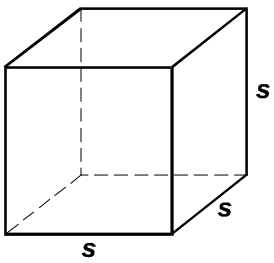
Sphere



Surface area = $4\pi r^2$

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

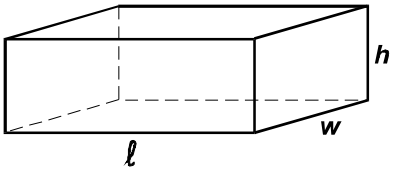
Cube



Surface area = $6s^2$

Volume = s^3

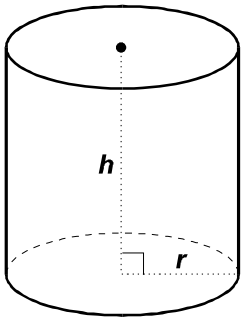
Rectangular solid



Surface area = $2\ell w + 2\ell h + 2wh$

Volume = ℓwh

Right circular cylinder



Surface area = $2\pi rh + 2\pi r^2$

Volume = $\pi r^2 h$

End of Definitions and Formulas