NSCAS NEBRASKA STUDENT-CENTERED ASSESSMENT SYSTEM

Summative Assessment
Mathematics Grade 7 and Grade 8 Reference Sheet

Shape	Area	Circumference
Circle	$A = \pi r^2$	$C = \pi d = 2\pi r$
Triangle	$A = \frac{1}{2}bh$	**Perimeter**
Rectangle	$A = lw$	$P = 2l + 2w = 2(l + w)$
Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$	
Parallelogram	$A = bh$	
Square	$A = s^2$	

Key	
b = base	l = length
h = height	w = width
B = area of base	s = side length
H = height of triangular prism	
s_1, s_2, s_3 are the lengths of each side of the triangular base	
d = diameter	r = radius
Use 3.14 for π.	

3 – Dimensional Shape	Volume	Surface Area
Rectangular Prism	$V = lwh = Bh$	$SA = 2lw + 2lh + 2wh = 2B + 2lb + 2wh$
Triangular Prism	$V = \frac{1}{2}lwh = Bh$	$SA = bh + (s_1 + s_2 + s_3)H = 2B + (s_1 + s_2 + s_3)H$
Cone	$V = \frac{1}{3}\pi r^2 h$	
Cylinder	$V = \pi r^2 h$	
Sphere	$V = \frac{4}{3}\pi r^3$	

Percent Change

$$\% \text{ change} = \frac{difference\ in\ amount}{original\ amount}$$

Pythagorean Theorem

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

Standard Units	Metric Units
Conversions – Length	
1 yard (yd) = 3 feet (ft) = 36 inches (in.)	1 meter (m) = 100 centimeters (cm)
1 mile (mi) = 1,760 yards (yd) = 5,280 feet (ft)	1 meter (m) = 1,000 millimeters (mm)
	1 kilometer (km) = 1,000 meters (m)
Conversions – Volume	
1 cup = 8 fluid ounces (fl oz)	1 liter (l) = 1,000 milliliters (ml)
1 pint (pt) = 2 cups	1 liter (l) = 1,000 cubic centimeters (cu. cm)
1 quart (qt) = 2 pints (pt)	
1 gallon (gal.) = 4 quarts (qt)	
Conversions – Weight/Mass	
1 pound (lb) = 16 ounces (oz)	1 gram (g) = 1,000 milligrams (mg)
1 ton = 2,000 pounds (lb)	1 kilogram (kg) = 1,000 grams (g)