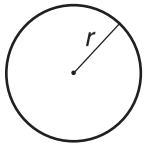
Eighth Grade Reference Sheet

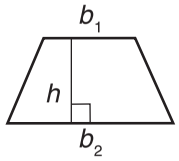
Area (A), Perimeter (P), and Circumference (C) formulas

Circle



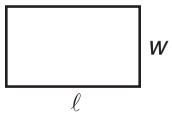
$A = \pi r^2$
$C = 2\pi r$ or πd

Trapezoid



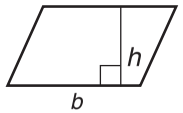
$A = \frac{1}{2}(b_1 + b_2)h$

Rectangle



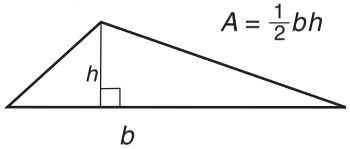
$A = \ell w$
$P = 2\ell + 2w$

Parallelogram



$A = bh$

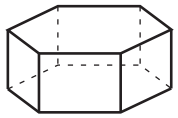
Triangle



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

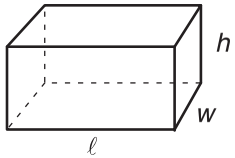
Volume (V) and Surface Area (SA) formulas where B is the area of the base

Right Prism



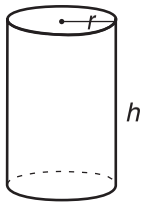
$V = Bh$
SA = sum of the base areas + sum of the lateral face areas

Rectangular Prism



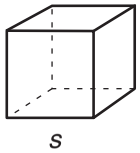
$V = Bh$ or ℓwh
$SA = 2(\ell w) + 2(\ell h) + 2(wh)$

Cylinder



$V = Bh$ or $\pi r^2 h$
$SA = 2\pi r^2 + 2\pi rh$

Cube



$V = s^3$
$SA = 6s^2$

Distance Traveled: distance = rate • time

Probability of an event = $\frac{\text{desired outcomes}}{\text{total outcomes}}$

Fundamental Counting Principle

If one event can occur in (m) ways and another event can occur in (n) ways, then the number of ways that both events can occur is $m \bullet n$.

Properties:

Identity property of addition:
$a + 0 = a$

Identity property of multiplication:
$a(1) = a$

Commutative property of addition:
$a + b = b + a$

Commutative property of multiplication:
$a(b) = b(a)$

Associative property of addition:
$(a + b) + c = a + (b + c)$

Associative property of multiplication:
$(a \bullet b)c = a(b \bullet c)$

Distributive property of multiplication:
$a(b + c) = ab + ac$

Inverse properties of addition:
$a + (-a) = 0$

Inverse properties of multiplication:
$a(\frac{1}{a}) = 1$

Customary Conversions

8 fluid ounces = 1 cup
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon
8 pints = 1 gallon
3 teaspoons = 1 tablespoon
16 tablespoons = 1 cup
16 fluid ounces = 1 pint
16 ounces = 1 pound
5,280 feet = 1 mile
12 inches = 1 foot
3 feet = 1 yard

Definitions

Mean: The sum of the numbers in a collection of data divided by the number of data.

Median: The middle number or average of the two middle numbers in a collection of data when the data are arranged in order.

Mode: The number or numbers that occur most often in a collection of data.

Range: The difference between the greatest and the least numbers in a collection of data.

Quartile
First Quartile = 25th percentile
Median = 50th percentile
Third Quartile = 75th percentile

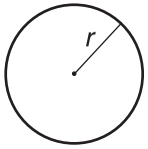
Metric Conversions

kilo-	hecto-	deka-	UNIT	deci-	centi-	milli-
k	h	da	meter (m) liter (l) gram (g)	d	c	m
1000	100	10	1	0.10	0.01	0.001

Octavo Grado
Hoja de Referencia

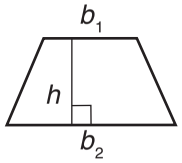
Fórmulas de Área (*A*), Perímetro (*P*) y circunferencia (*C*)

Círculo



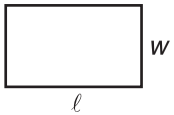
$A = \pi r^2$
$C = 2\pi r$ o πd

Trapecio



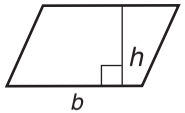
$A = \frac{1}{2}(b_1 + b_2)h$

Rectángulo



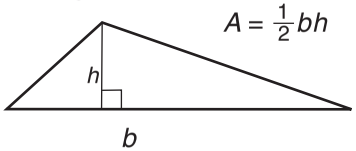
$A = \ell w$
$P = 2\ell + 2w$

Paralelogramo



$A = bh$

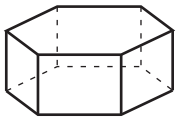
Triángulo



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

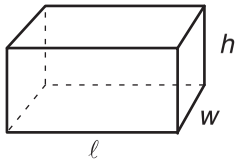
Fórmulas de Volumen (*V*) y Área de Superficie donde *B* es el área de la base

Prisma Recto



$V = Bh$
Área de Superficie = suma del área de la base + suma de superficies laterales

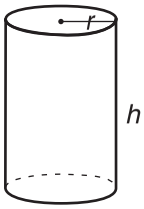
Prisma Rectangular



$V = Bh$ o ℓwh

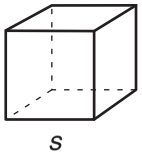
Superficie Total = $2(\ell w) + 2(\ell h) + 2(wh)$

Cilindro



$V = Bh$ o $\pi r^2 h$
Superficie Total = $2\pi r^2 + 2\pi rh$

Cubo



$V = s^3$
Superficie Total = $6s^2$

Distancia recorrida: distancia = velocidad • tiempo

Probabilidad de un evento = $\frac{\text{resultados favorables}}{\text{resultados posibles}}$

Principio Fundamental de Contar

Si un evento puede ocurrir en (m) maneras y otro evento puede ocurrir en (n) maneras, entonces el número de maneras en que ambos eventos pueden ocurrir es $m \bullet n$.

Propiedades:

Propiedad de identidad de la suma:
$a + 0 = a$

Propiedad de identidad de la multiplicación:
$a(1) = a$

Propiedad conmutativa de la suma:
$a + b = b + a$

Propiedad conmutativa de la multiplicación:
$a(b) = b(a)$

Propiedad asociativa de la suma:
$(a + b) + c = a + (b + c)$

Propiedad asociativa de la multiplicación:
$(a \bullet b)c = a(b \bullet c)$

Propiedad distributiva de la multiplicación:
$a(b + c) = ab + ac$

Propiedad inversa de la suma:
$a + (-a) = 0$

Propiedad inversa de la multiplicación:
$a(\frac{1}{a}) = 1$

Conversiones Usuales

8 onzas fluidas = 1 taza
2 tazas = 1 pinta
2 pintas = 1 cuarto
4 cuartos= 1 galón
8 pintas = 1 galón
3 cucharaditas = 1 cucharada
16 cucharadas = 1 taza
16 onzas fluidas = 1 pinta
16 onzas = 1 libra
5,280 pies = 1 milla
12 pulgadas = 1 pie
3 pies = 1 yarda

Definiciones

Media: La suma de un grupo de números dividida entre el número de elementos en el grupo.

Mediana: El número medio de un conjunto de datos cuando los datos están dispuestos en orden numérico. Si el conjunto de datos es par, la mediana es la media de los dos números centrales.

Moda: El número o números que aparecen con mas frecuencia en una recopilación de datos.

Rango: La diferencia entre los números mayores y los menores en una recopilación de datos.

Cuartile
Primer Cuartile = 25 percentil
Medio = 50 percentil
Tercer Cuartile = 75 percentil

Conversiones Métricas

kilo-	hecto-	deca-	Unidad	deci-	centi-	mili-
k	h	da	metro (m) litro (l) gramo (g)	d	c	m
1000	100	10	1	0.10	0.01	0.001