

F.A.S.T. Reference Sheets for Mathematics

Grade 4 FAST Mathematics Reference Sheet

Customary Conversions

1 foot = 12 inches

1 yard = 3 feet

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 pound = 16 ounces

Metric Conversions

1 meter = 100 centimeters

1 meter = 1000 millimeters

1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 gram = 1000 milligrams

1 kilogram = 1000 grams

Time Conversions

1 minute = 60 seconds

1 hour = 60 minutes

Formulas

Rectangle

$$P = l + l + w + w$$

$$A = l \times w$$

Key	
l = length	P = perimeter
w = width	A = area

Grade 5 FAST Mathematics Reference Sheet

Customary Conversions

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric Conversions

1 centimeter = 10 millimeters
1 meter = 100 centimeters
1 meter = 1000 millimeters
1 kilometer = 1000 meters

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 week = 7 days

Formulas

Rectangle $P = l + l + w + w$

$$P = 2l + 2w$$

$$A = l \times w$$

Rectangular Prism $V = l \times w \times h$

or

$$V = B \times h$$

Key

l = length

w = width

h = height

B = area of the base

P = perimeter

A = area

V = volume

Grade 6 FAST Mathematics Reference Sheet

Customary Conversions

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric Conversions

1 meter = 100 centimeters
1 meter = 1000 millimeters
1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 week = 7 days
1 year = 365 days
1 year = 52 weeks

Formulas

Rectangular Prism $V = lwh$
or
 $V = Bh$

Key	
l = length	B = area of base
w = width	V = volume
h = height	

Grade 7 FAST Mathematics Reference Sheet

Conversions within a System of Measure

Customary Conversions

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric Conversions

1 meter = 100 centimeters
1 meter = 1000 millimeters
1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 week = 7 days
1 year = 365 days
1 year = 52 weeks

Conversions between Systems of Measure

Customary to Metric Conversion Approximations

1 inch = 2.54 centimeters
1 foot = 0.305 meters
1 mile = 1.61 kilometers

1 cup = 0.24 liters
1 gallon = 3.785 liters
1 ounce = 28.35 grams
1 pound = 0.454 kilograms

Metric to Customary Conversion Approximations

1 centimeter = 0.39 inches
1 meter = 3.28 feet
1 kilometer = 0.62 miles

1 liter = 4.23 cups
1 liter = 0.264 gallons
1 gram = 0.0352 ounces
1 kilogram = 2.204 pounds

Grade 7 FAST Mathematics Reference Sheet

Formulas

Parallelogram Or Rhombus	$A = bh$ $A = lw$
Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
Circle	$C = 2\pi r$ or $C = \pi d$ $A = \pi r^2$
Right Circular Cylinder	$V = Bh$ or $V = \pi r^2 h$

Key	
b = base	A = area
h = height	C = circumference
l = length	V = volume
w = width	
r = radius	
d = diameter	
B = area of base	

Simple Interest Formula
$I = prt$ <p>where I = interest, p = principal, r = rate, t = time</p>

Percent Error Formula
$\frac{ Estimate - Actual }{Actual} \times 100$

Percent of Change
$\frac{final\ value - initial\ value}{initial\ value} \times 100$

Grade 8 FAST Mathematics Reference Sheet

Conversions within a System of Measure

Customary Conversions

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1 mile = 1,760 yards

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1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

Metric Conversions

1 meter = 100 centimeters
1 meter = 1000 millimeters
1 kilometer = 1000 meters

1 liter = 1000 milliliters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 week = 7 days
1 year = 365 days
1 year = 52 weeks

Conversions between Systems of Measure

Customary to Metric Conversion Approximations

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1 foot = 0.305 meters
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1 liter = 4.23 cups
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1 kilogram = 2.204 pounds

Grade 8 FAST Mathematics Reference Sheet

Formula

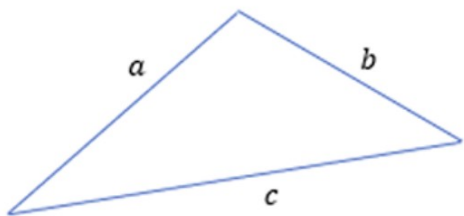
Slope Formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

where m = slope

Theorems

Triangle Inequality Theorem

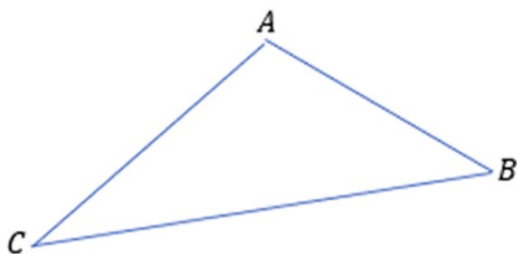


$$a + b > c$$

$$a + c > b$$

$$b + c > a$$

Triangle Sum Theorem



$$m\angle A + m\angle B + m\angle C = 180^\circ$$

Algebra 1 EOC FSA Mathematics Reference Sheet

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1 liter = 1000 milliliters

1 gram = 1000 milligrams
1 kilogram = 1000 grams

Time Conversions

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1 year = 365 days
1 year = 52 weeks

Geometry EOC FSA Mathematics Reference Sheet

Customary Conversions

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1 yard = 3 feet
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1 gram = 1000 milligrams
1 kilogram = 1000 grams

Formulas

$$\sin A^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos A^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan A^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$V = Bh$$

$$V = \frac{1}{3} Bh$$

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

$$y = mx + b, \text{ where } m = \text{slope and } b = y\text{-intercept}$$

$$y - y_1 = m(x - x_1), \text{ where } m = \text{slope and } (x_1, y_1) \text{ is a point on the line}$$

Time Conversions

1 minute = 60 seconds
1 hour = 60 minutes
1 day = 24 hours
1 year = 365 days
1 year = 52 weeks