

Basic Facts

Addition

$0 + 0 = 0$	$0 + 5 = 5$	$1 + 1 = 2$	$1 + 5 = 6$	$2 + 2 = 4$	$2 + 6 = 8$	$3 + 5 = 8$
$0 + 1 = 1$	$0 + 6 = 6$	$1 + 2 = 3$	$1 + 6 = 7$	$2 + 3 = 5$	$2 + 7 = 9$	$3 + 6 = 9$
$0 + 2 = 2$	$0 + 7 = 7$	$1 + 3 = 4$	$1 + 7 = 8$	$2 + 4 = 6$	$3 + 3 = 6$	$4 + 4 = 8$
$0 + 3 = 3$	$0 + 8 = 8$	$1 + 4 = 5$	$1 + 8 = 9$	$2 + 5 = 7$	$3 + 4 = 7$	$4 + 5 = 9$
$0 + 4 = 4$	$0 + 9 = 9$					

$1 + 9 = 10$	$3 + 8 = 11$	$4 + 8 = 12$	$5 + 7 = 12$	$6 + 7 = 13$	$7 + 7 = 14$	$8 + 8 = 16$
$2 + 8 = 10$	$3 + 9 = 12$	$4 + 9 = 13$	$5 + 8 = 13$	$6 + 8 = 14$	$7 + 8 = 15$	$8 + 9 = 17$
$2 + 9 = 11$	$4 + 6 = 10$	$5 + 5 = 10$	$5 + 9 = 14$	$6 + 9 = 15$	$7 + 9 = 16$	$9 + 9 = 18$
$3 + 7 = 10$	$4 + 7 = 11$	$5 + 6 = 11$	$6 + 6 = 12$			

Subtraction

$0 - 0 = 0$	$3 - 2 = 1$	$5 - 1 = 4$	$6 - 3 = 3$	$7 - 4 = 3$	$8 - 4 = 4$	$9 - 3 = 6$
$1 - 0 = 1$	$3 - 3 = 0$	$5 - 2 = 3$	$6 - 4 = 2$	$7 - 5 = 2$	$8 - 5 = 3$	$9 - 4 = 5$
$1 - 1 = 0$	$4 - 0 = 4$	$5 - 3 = 2$	$6 - 5 = 1$	$7 - 6 = 1$	$8 - 6 = 2$	$9 - 5 = 4$
$2 - 0 = 2$	$4 - 1 = 3$	$5 - 4 = 1$	$6 - 6 = 0$	$7 - 7 = 0$	$8 - 7 = 1$	$9 - 6 = 3$
$2 - 1 = 1$	$4 - 2 = 2$	$5 - 5 = 0$	$7 - 0 = 7$	$8 - 0 = 8$	$8 - 8 = 0$	$9 - 7 = 2$
$2 - 2 = 0$	$4 - 3 = 1$	$6 - 0 = 6$	$7 - 1 = 6$	$8 - 1 = 7$	$9 - 0 = 9$	$9 - 8 = 1$
$3 - 0 = 3$	$4 - 4 = 0$	$6 - 1 = 5$	$7 - 2 = 5$	$8 - 2 = 6$	$9 - 1 = 8$	$9 - 9 = 0$
$3 - 1 = 2$	$5 - 0 = 5$	$6 - 2 = 4$	$7 - 3 = 4$	$8 - 3 = 5$	$9 - 2 = 7$	

$10 - 9 = 1$	$10 - 2 = 8$	$11 - 4 = 7$	$12 - 5 = 7$	$13 - 6 = 7$	$14 - 6 = 8$	$16 - 9 = 7$
$10 - 8 = 2$	$10 - 1 = 9$	$11 - 3 = 8$	$12 - 4 = 8$	$13 - 5 = 8$	$14 - 5 = 9$	$16 - 8 = 8$
$10 - 7 = 3$	$11 - 9 = 2$	$11 - 2 = 9$	$12 - 3 = 9$	$13 - 4 = 9$	$15 - 9 = 6$	$16 - 7 = 9$
$10 - 6 = 4$	$11 - 8 = 3$	$12 - 9 = 3$	$13 - 9 = 4$	$14 - 9 = 5$	$15 - 8 = 7$	$17 - 9 = 8$
$10 - 5 = 5$	$11 - 7 = 4$	$12 - 8 = 4$	$13 - 8 = 5$	$14 - 8 = 6$	$15 - 7 = 8$	$17 - 8 = 9$
$10 - 4 = 6$	$11 - 6 = 5$	$12 - 7 = 5$	$13 - 7 = 6$	$14 - 7 = 7$	$15 - 6 = 9$	$18 - 9 = 9$
$10 - 3 = 7$	$11 - 5 = 6$	$12 - 6 = 6$				

Multiplication

$0(0) = 0$	$0(5) = 0$	$1(1) = 1$	$1(6) = 6$	$2(3) = 6$	$2(8) = 16$	$3(6) = 18$
$0 \cdot 1 = 0$	$0 \cdot 6 = 0$	$1 \cdot 2 = 2$	$1 \cdot 7 = 7$	$2 \cdot 4 = 8$	$2 \cdot 9 = 18$	$3 \cdot 7 = 21$
$0 \cdot (2) = 0$	$0 \cdot (7) = 0$	$1 \cdot (3) = 3$	$1 \cdot (8) = 8$	$2 \cdot (5) = 10$	$3 \cdot (3) = 9$	$3 \cdot (8) = 24$
$0 \cdot 3 = 0$	$0 \cdot 8 = 0$	$1 \cdot 4 = 4$	$1 \cdot 9 = 9$	$2 \cdot 6 = 12$	$3 \cdot 4 = 12$	$3 \cdot 9 = 27$
$(0)(4) = 0$	$(0)(9) = 0$	$(1)(5) = 5$	$(2)(2) = 4$	$(2)(7) = 14$	$(3)(5) = 15$	$(4)(4) = 16$
$4 \cdot 5 = 20$	$4 \cdot 8 = 32$	$5 \cdot 6 = 30$	$5 \cdot 9 = 45$	$6 \cdot 8 = 48$	$7 \cdot 8 = 56$	$8 \cdot 9 = 72$
$4(6) = 24$	$4(9) = 36$	$5(7) = 35$	$6(6) = 36$	$6(9) = 54$	$7(9) = 63$	$9(9) = 81$
$4 \cdot 7 = 28$	$5 \cdot 5 = 25$	$5 \cdot 8 = 40$	$6 \cdot 7 = 42$	$7 \cdot 7 = 49$	$8 \cdot 8 = 64$	

Division

U = undefined

$0 \div 0 = \text{U}$	$0 \div 9 = 0$	$4 \div 0 = \text{U}$	$6 \div 2 = 3$	$8 \div 2 = 4$	$10 \div 5 = 2$	$15 \div 5 = 3$
$\frac{0}{1} = 0$	$\frac{1}{0} = \text{U}$	$\frac{4}{1} = 4$	$\frac{6}{3} = 2$	$\frac{8}{4} = 2$	$\frac{12}{2} = 6$	$\frac{16}{2} = 8$
$0 \div 2 = 0$	$1 \div 1 = 1$	$4 \div 2 = 2$	$6 \div 6 = 1$	$8 \div 8 = 1$	$12 \div 3 = 4$	$16 \div 4 = 4$
$0 \div 3 = 0$	$2 \div 0 = \text{U}$	$4 \div 4 = 1$	$7 \div 0 = \text{U}$	$9 \div 0 = \text{U}$	$12 \div 4 = 3$	$16 \div 8 = 2$
$4 \overline{)0} = 0$	$1 \overline{)2} = 2$	$0 \overline{)5} = \text{U}$	$1 \overline{)7} = 7$	$1 \overline{)9} = 9$	$6 \overline{)12} = 2$	$2 \overline{)18} = 9$
$0 \div 5 = 0$	$2 \div 2 = 1$	$5 \div 1 = 5$	$7 \div 7 = 1$	$9 \div 3 = 3$	$14 \div 2 = 7$	$18 \div 3 = 6$
$0 \div 6 = 0$	$3 \div 0 = \text{U}$	$5 \div 5 = 1$	$8 \div 0 = \text{U}$	$9 \div 9 = 1$	$14 \div 7 = 2$	$18 \div 6 = 3$
$0 \overline{)7} = 0$	$3 \overline{)1} = 3$	$6 \overline{)0} = \text{U}$	$8 \overline{)1} = 8$	$10 \overline{)2} = 5$	$15 \overline{)3} = 5$	$18 \overline{)9} = 2$
$0 \div 8 = 0$	$3 \div 3 = 1$	$6 \div 1 = 6$				

$\frac{20}{4} = 5$	$\frac{24}{6} = 4$	$\frac{28}{7} = 4$	$\frac{35}{7} = 5$	$\frac{42}{6} = 7$	$\frac{49}{7} = 7$	$\frac{63}{9} = 7$
$20 \div 5 = 4$	$24 \div 8 = 3$	$30 \div 5 = 6$	$36 \div 4 = 9$	$42 \div 7 = 6$	$54 \div 6 = 9$	$64 \div 8 = 8$
$3 \overline{)21} = 7$	$5 \overline{)25} = 5$	$6 \overline{)30} = 5$	$6 \overline{)36} = 6$	$5 \overline{)45} = 9$	$9 \overline{)54} = 6$	$8 \overline{)72} = 9$
$21 \overline{)7} = 3$	$27 \overline{)3} = 9$	$32 \overline{)4} = 8$	$36 \overline{)9} = 4$	$45 \overline{)9} = 5$	$56 \overline{)7} = 8$	$72 \overline{)9} = 8$
$\frac{24}{3} = 8$	$\frac{27}{9} = 3$	$\frac{32}{8} = 4$	$\frac{40}{5} = 8$	$\frac{48}{6} = 8$	$\frac{56}{8} = 7$	$\frac{81}{9} = 9$
$24 \div 4 = 6$	$28 \div 4 = 7$	$35 \div 5 = 7$	$40 \div 8 = 5$	$48 \div 8 = 6$	$63 \div 7 = 9$	

Squares

$0^2 = 0$	$3^2 = 9$	$6^2 = 36$	$9^2 = 81$	$12^2 = 144$	$14^2 = 196$	$20^2 = 400$
$1^2 = 1$	$4^2 = 16$	$7^2 = 49$	$10^2 = 100$	$13^2 = 169$	$15^2 = 225$	$25^2 = 625$
$2^2 = 4$	$5^2 = 25$	$8^2 = 64$	$11^2 = 121$			

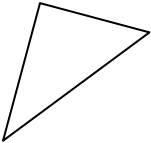
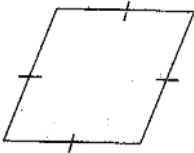
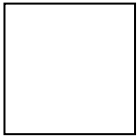
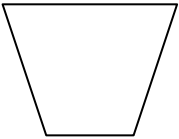
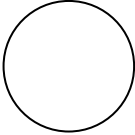
Cubes

$0^3 = 0$	$1^3 = 1$	$2^3 = 8$	$3^3 = 27$	$4^3 = 64$	$5^3 = 125$	$6^3 = 216$
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Square Roots

$\sqrt{0} = 0$	$\sqrt{9} = 3$	$\sqrt{36} = 6$	$\sqrt{81} = 9$	$\sqrt{144} = 12$	$\sqrt{196} = 14$	$\sqrt{400} = 20$
$\sqrt{1} = 1$	$\sqrt{16} = 4$	$\sqrt{49} = 7$	$\sqrt{100} = 10$	$\sqrt{169} = 13$	$\sqrt{225} = 15$	$\sqrt{625} = 25$
$\sqrt{4} = 2$	$\sqrt{25} = 5$	$\sqrt{64} = 8$	$\sqrt{121} = 11$			

Perimeter and Area Formulas

Plane Figure	Drawing	Perimeter/ Circumference	Area
Triangle		$P = a + b + c$	$A = \frac{1}{2}bh$
Parallelogram		$P = a + b + c + d$	$A = bh$
Rectangle		$P = 2l + 2w$	$A = lw$
Rhombus		$P = 4s$	$A = bh$
Square		$P = 4s$	$A = s^2$
Trapezoid		$P = a + b + c + d$	$A = \frac{1}{2}h(b_1 + b_2)$
Circle		$C = \pi d$ or $2\pi r$	$A = \pi r^2$

U.S. and Metric Systems of Measurement Conversion Charts

LENGTH

U.S. SYSTEM OF MEASUREMENT

12 inches (in) = 1 foot (ft)	3 feet = 1 yard (yd)	5280 feet = 1 mile (mi)
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METRIC SYSTEM OF MEASUREMENT

Prefix	Meaning	Metric Unit of Length
Kilo	1000	1 kilometer (km) = 1000 meters (m)
Hecto	100	1 hectometer (hm) = 100 m
Deka	10	1 dekameter (dam) = 10 m
		1 meter (m) = 1 m
Deci	1/10	1 decimeter (dm) = 1/10 m or 0.1 m
Centi	1/100	1 centimeter (cm) = 1/100 m or 0.01 m
Milli	1/1000	1 millimeter (mm) = 1/1000 m or 0.001 m

WEIGHT AND MASS

WEIGHT: U.S. SYSTEM OF MEASUREMENT

16 ounces (oz) = 1 pound (lb)	2000 pounds = 1 ton
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MASS: METRIC SYSTEM OF MEASUREMENT

Prefix	Meaning	Metric Unit of Mass
Kilo	1000	1 kilogram (kg) = 1000 grams (g)
Hecto	100	1 hectogram (hg) = 100 g
Deka	10	1 dekagram (dag) = 10 g
		1 gram (g) = 1 g
Deci	1/10	1 decigram (dg) = 1/10 g or 0.1 g
Centi	1/100	1 centigram (cg) = 1/100 g or 0.01 g
Milli	1/1000	1 milligram (mg) = 1/1000 g or 0.001 g

CAPACITY

U.S. SYSTEM OF MEASUREMENT

8 fluid ounces (fl oz) = 1 cup (c)	2 pints = 1 quart (qt)
2 cups = 1 pint (pt)	4 quarts = 1 gallon (gal)

METRIC SYSTEM OF MEASUREMENT

Prefix	Meaning	Metric Unit of Capacity
Kilo	1000	1 kiloliter (kl) = 1000 liter (L)
Hecto	100	1 hectoliter (hl) = 100 L
Deka	10	1 dekaliter (dal) = 10 L
		1 liter (L) = 1 L
Deci	1/10	1 deciliter (dl) = 1/10 L or 0.1 L
Centi	1/100	1 centiliter (cl) = 1/100 L or 0.01 L
Milli	1/1000	1 milliliter (ml) = 1/1000 L or 0.001 L