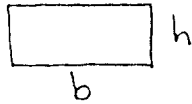


Math 16A

Kouba

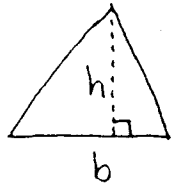
Basic Math Formulas

1. rectangle :



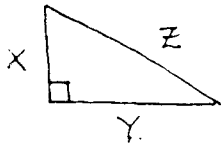
area $A = bh$
perimeter $P = 2b + 2h$

2. triangle :



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

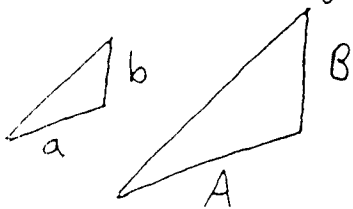
3. right triangle :



Pythagorean Theorem

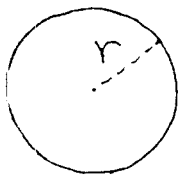
$$x^2 + y^2 = z^2$$

4. similar triangles :



$$\frac{A}{a} = \frac{B}{b} \quad \text{or} \quad \frac{a}{b} = \frac{A}{B}$$

5. circle :

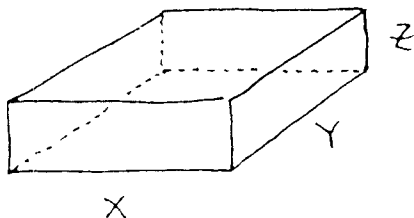


area $A = \pi r^2$

circumference $C = 2\pi r$

6. rectangular solid :

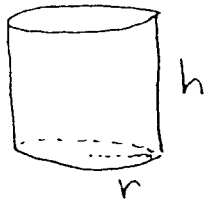
volume $V = xyz$



surface area

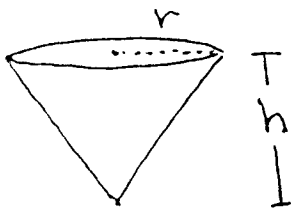
$$S = 2xy + 2yz + 2xz$$

7. circular cylinder: volume $V = \pi r^2 h$



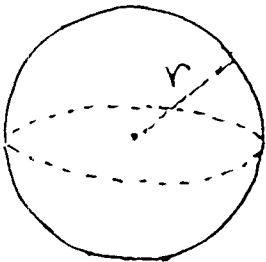
surface area
 $S = 2\pi r^2 + 2\pi r h.$

8. circular cone: volume



$$V = \frac{1}{3} \pi r^2 h$$

9. sphere: volume $V = \frac{4}{3} \pi r^3$



surface area

$$S = 4\pi r^2$$

10. A is directly proportional to B:

$$A = k B$$

11. A is inversely proportional to B:

$$A = k \cdot \frac{1}{B}$$

UNIT

MEASURES AND WEIGHTS
EQUIVALENTS IN OTHER UNITS OF SAME SYSTEM

ABB. OR SYMBOL

METRIC EQUIVALENT

mile	5280 feet, 320 rods, 1760 yards	1.609 kilometers
rod	5.50 yards, 16.5 feet	5.029 meters
yard	3 feet, 36 inches	0.914 meters
foot	12 inches, 0.333 yards	30.480 centimeters
inch	0.083 feet, 0.027 yards	2.540 centimeters
square mile	640 acres, 102,400 square rods	2.590 square kilometers
acre	4840 square yards, 43,560 square feet	0.405 hectares, 4047 square meters
square rod	30.25 square yards, 0.006 acres	25.293 square meters
square yard	1296 square inches, 9 square feet	0.836 square meters
square foot	144 square inches, 0.111 square yards	0.093 square meters
square inch	0.007 square feet, 0.00077 square yards	6.451 square centimeters
cubic yard	27 cubic feet, 46.656 cubic inches	0.765 cubic meters
cubic foot	1728 cubic inches, 0.0370 cubic yards	0.028 cubic meters
cubic inch	0.00058 cubic feet, 0.000021 cubic yards	16.387 cubic centimeters
ton	20 short hundredweight, 2000 pounds	0.907 metric tons
short ton	20 long hundredweight, 2240 pounds	1.016 metric tons
hundredweight	100 pounds, 0.05 short tons	45.359 kilograms
short hundredweight	112 pounds, 0.05 long tons	50.802 kilograms
long hundredweight	16 ounces, 7000 grains	0.453 kilograms
pound	16 drams, 437.5 grains	28.349 grams
ounce	27.343 grains, 0.0625 ounces	1.771 grams
dram	0.036 drams, 0.002285 ounces	0.0648 grams
grain	<i>troy</i>	
pound	12 ounces, 240 pennyweight, 5760 grains	0.373 kilograms
ounce	20 pennyweight, 480 grains	31.103 grams
pennyweight	24 grains, 0.05 ounces	1.555 grams
grain	0.042 pennyweight, 0.002083 ounces	0.0648 grams
pound	12 ounces, 5760 grains	0.373 kilograms
ounce	8 drams, 480 grains	31.103 grams
dram	3 scruples, 60 grains	3.887 grams
scruple	20 grains, 0.333 drams	1.295 grams
grain	0.05 scruples, 0.002083 ounces, 0.0166 drams	0.0648 grams
gallon	<i>U.S. liquid measure</i>	
quart	4 quarts (231 cubic inches)	3.785 liters
pint	2 pints (57.75 cubic inches)	0.946 liters
gill	4 gills (28.875 cubic inches)	0.473 liters
fluidounce	4 fluidounces (7.218 cubic inches)	118.291 milliliters
fluidram	8 fluidrams (1.804 cubic inches)	29.573 milliliters
minim	60 minims (0.225 cubic inches)	3.696 milliliters
	$\frac{1}{60}$ fluidram (0.003759 cubic inches)	0.061610 milliliters
bushel	<i>U.S. dry measure</i>	
peck	4 pecks (2150.42 cubic inches)	35.238 liters
quart	8 quarts (537.605 cubic inches)	8.809 liters
pint	2 pints (67.200 cubic inches)	1.101 liters
	$\frac{1}{2}$ quart (33.600 cubic inches)	0.550 liters
bushel	<i>British imperial liquid and dry measure</i>	
peck	4 pecks (2219.36 cubic inches)	0.036 cubic meters
gallon	2 gallons (554.84 cubic inches)	0.009 cubic meters
quart	4 quarts (277.420 cubic inches)	4.545 liters
pint	2 pints (69.355 cubic inches)	1.736 liters
gill	4 gills (34.678 cubic inches)	568.26 cubic centimeters
fluidounce	5 fluidounces (8.669 cubic inches)	142.066 cubic centimeters
fluidram	8 fluidrams (1.7339 cubic inches)	28.416 cubic centimeters
minim	60 minims (0.216734 cubic inches)	3.5516 cubic centimeters
	$\frac{1}{60}$ fluidram (0.003612 cubic inches)	0.059194 cubic centimeters