

Measuring Circles

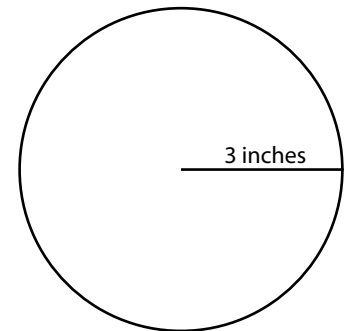
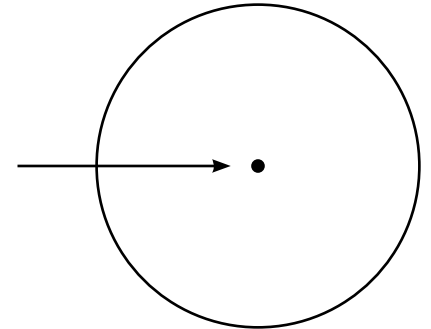
A **circle** is not a polygon, because it is not made up of connected line segments. Because circles are not polygons, they cannot be measured like polygons.

A circle is named for its **center point**, and when measured from its center point to anywhere on its edge, the measurement is always the same. This measurement is called its **radius**. When we measure from side to side, drawing our line through the circle's center point, we call this measurement the diameter. The diameter is the radius x 2. The circumference is the distance around a circle.

π this is pi. The Greek letter actually stands for a never-ending decimal number, which we round to 3.14.

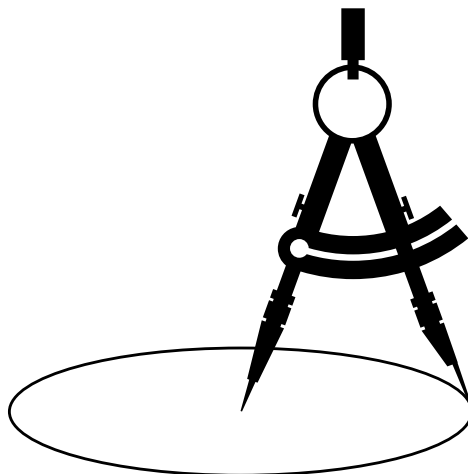
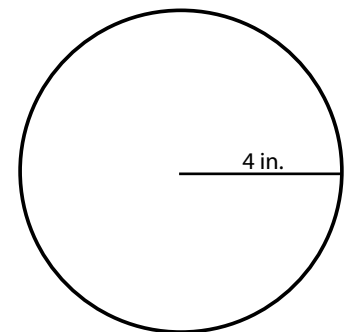
The formula for finding the **circumference** of any circle: →

$$\begin{aligned} \text{circumference} &= 2 \times \pi \times \text{radius} \\ \text{which is } &2 \times 3.14 \times \text{radius} \\ &2 \times 3.14 \times 3 = 18.84 \text{ inches} \end{aligned}$$



Here is the formula for finding the **area** of a circle: →

$$\begin{aligned} \pi \times \text{radius} \times \text{radius} &= \text{area} \\ 3.14 \times 4 \times 4 &= 50.24 \end{aligned}$$



3 Types of Percentage Problems

In percentage problems, it is important to remember that there are 3 changeable parts (or variables):

#1 part, #2 percent, and #3 total

Three main types of percent problems: → 20 is 40% of 50

1. missing part problems → What is 40% of 50?

2. missing percent problems → 20 is what % of 50?

3. missing total problems → 20 is 40% of what number?

1. What is 30% of 1,440? → $\frac{30}{100} \times 1,440 = 3 \times 144 = 432$

2. 20 is what % of 50? → $\frac{20}{50} = \frac{?}{100}$

The best way to solve this is to simply divide 20 by 50, which is 0.4 or 40%

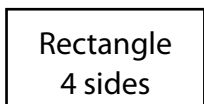
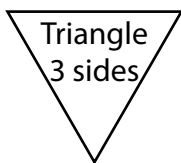
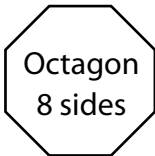
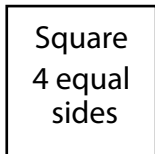
3. 20 of 40% of what number? → $\frac{\text{part} \times 100}{\text{percent}} \rightarrow \frac{20 \times 100}{40} \rightarrow \frac{2,000}{40} \rightarrow 50$

Greatest Common Factor Chart

Number	Pairs of Factors	Factors	Common Factors	Greatest Common Factors

Geometry Chart

Shapes



3-D Solid Shapes

Rectangular Prism



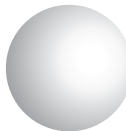
Cone



Cube



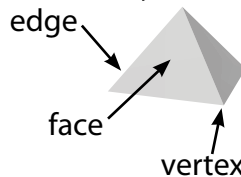
Sphere



Cylinder

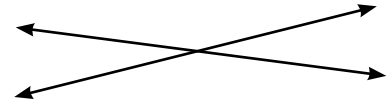


Square Pyramid

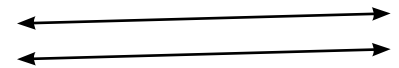
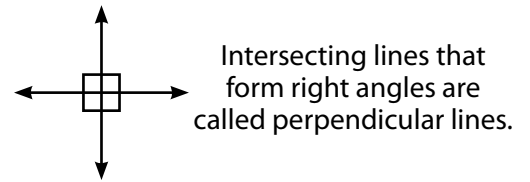


In a three-dimensional shape, a vertex is where three or more edges meet, an edge is where two sides meet, and a face is the shape formed by the edges. In this square pyramid, see if you can find the 5 vertices, the 8 edges, and the 5 faces. Notice that there are 4 triangle faces and 1 square face.

3 Basic Types of Lines

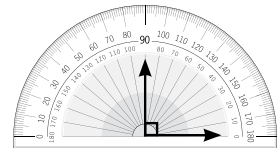


Lines that cross one another are called intersecting lines

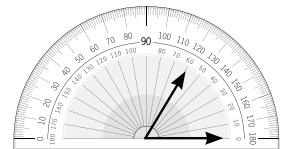


Lines that never intersect and are the same distance apart are called parallel lines.

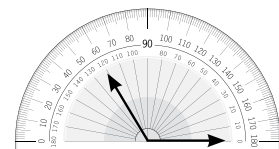
Angles in Degrees



A right angle measures 90° and is shown by the .



An acute angle is any angle which measures less than 90° .



An obtuse angle is any angle which measures more than 90° .

Measurement Chart: English

Length	Time	Volume
12 inches = 1 foot	365 days = 1 year	2 cups = 1 pint
3 feet = 1 yard	366 days = 1 leap year	2 pints = 1 quart
5,280 feet = 1 mile	24 hours = 1 day	4 quarts = 1 gallon
1,760 yards = 1 mile	60 minutes = 1 hour	8 quarts = 1 peck
	60 seconds = 1 minute	4 pecks = 1 bushel

Items	Weight
12 items = 1 dozen	16 ounces = 1 pound
	2,000 pounds = 1 ton

Measurement Chart: Metric

Prefix	Meaning	Length	Mass	Capacity
kilo-	thousand (1,000)	<u>kilometer</u>	<u>kilogram</u>	<u>kiloliter</u>
hecto-	hundred (100)	<u>hectometer</u>	<u>hectogram</u>	<u>hectoliter</u>
deka-	ten (10)	<u>dekameter</u>	<u>dekagram</u>	<u>dekaliter</u>
base unit	ones (1)	meter	gram	liter
deci-	tenths (0.1)	<u>decimeter</u>	<u>decigram</u>	<u>deciliter</u>
centi-	hundreds (0.01)	<u>centimeter</u>	<u>centigram</u>	<u>centiliter</u>
milli-	thousands (0.001)	<u>millimeter</u>	<u>milligram</u>	<u>milliliter</u>

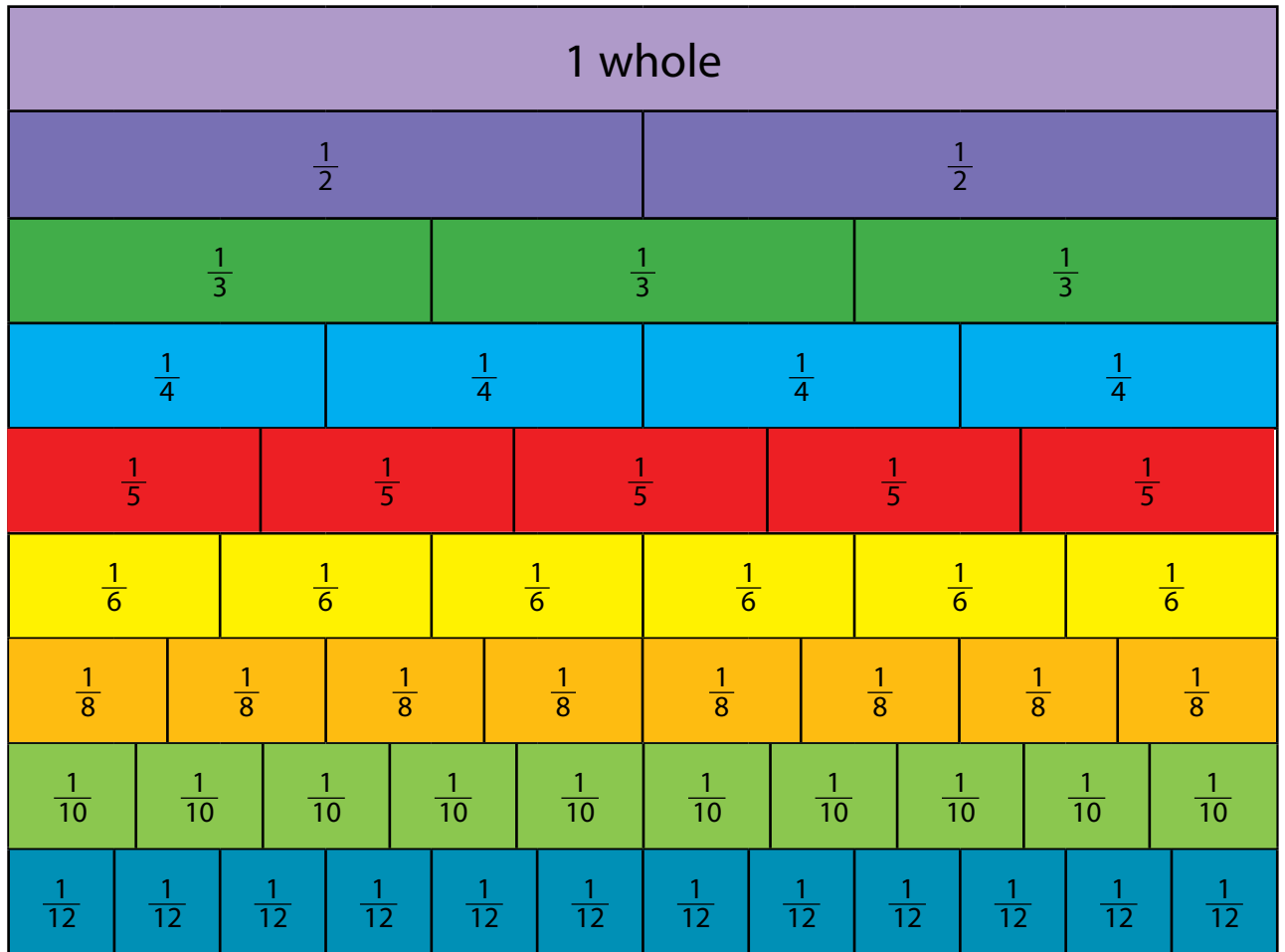
Multiplication Grid

x	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Multiplication Grid

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Fraction Chart



Decimal & Percents Chart

1 = 100%											
.5 = 50%						.5 = 50%					
$\overline{.33} = \overline{33}\%$				$\overline{.33} = \overline{33}\%$				$\overline{.33} = \overline{33}\%$			
.25 = 25%			.25 = 25%			.25 = 25%			.25 = 25%		
.2 = 20%		.2 = 20%		.2 = 20%		.2 = 20%		.2 = 20%		.2 = 20%	
$\overline{.16} = \overline{16}\%$		$\overline{.16} = \overline{16}\%$		$\overline{.16} = \overline{16}\%$		$\overline{.16} = \overline{16}\%$		$\overline{.16} = \overline{16}\%$		$\overline{.16} = \overline{16}\%$	
.125 = 12.5%		.125 = 12.5%		.125 = 12.5%		.125 = 12.5%		.125 = 12.5%		.125 = 12.5%	
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$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$	$\overline{.083} = \overline{8.3}\%$