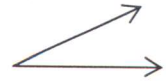
Plane Geometry – the study of figures and shapes in two dimensions

Angles

Right angle – a 90° angle that can be indicated by the ⌙ symbol

Acute angles – any angle measuring less than 90°

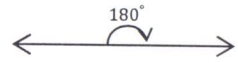
Obtuse angles – any angle measuring more than 90°



Straight angle – any angle measuring 180° in a straight line

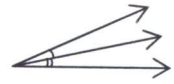
Ex: What are the types and measures of the following angles formed between the hands of a clock:

6'oclock? 2 o'clock? 3 o'clock? 8 o'clock?

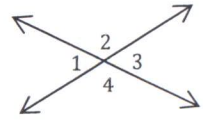


Pairs of Angles

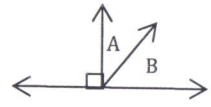
Adjacent Angles – angles that share a common side and common vertex



Vertical angles – when two straight lines intersect the opposite angles are called vertical and are always equal

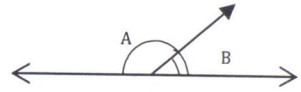


Complementary – two angles that add up to 90°



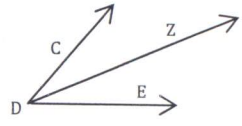
Supplementary – two angles that add up to 180°

Ex: Adjacent angles that form a straight line



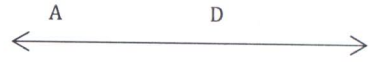
Angle bisector – a ray that cuts a single anlge into two smaller equal angles

i.e. Ray Z is the angle bisector of angle CDE.



Lines

Straight line – continues in two directions, has infinite number of ponts and can be named by a single lowercase letter or by any two points on the line.



i.e. the line sample line can be named as follows: $\overleftrightarrow{AD}$ or a or b

Line Segment – a part of a line names dor its two endpoints

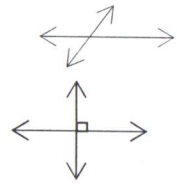
i.e. the sample line segment can be named as follows: $\overline{BC}$

Ray – has one endpoint asn extends to infinite in one direction. It is named by the endpoitn and any other point on the ray

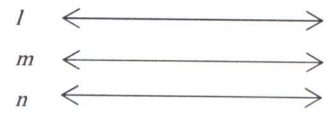
i.e. the sample ray can be named as follows: $\overrightarrow{XY}$

Intersecting Lines – when two or more lines intersect at a common point

Perpendicular Lines – two line that intersect to form four right angles

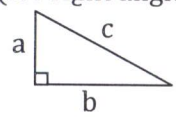


Parallel Lines – two or more line that remain the same distance apart and never intersect



Geometric Shapes

<u>Planar</u>

		Formulas
Triangle	Perimeter:	$P = s_1 + s_2 + s_3$
	Area:	$A = \frac{1}{2}bh$
Pythagorean Theorem (for right angles): 	Equation to find the lengths for each side of a right triangle	$a^2 + b^2 = c^2$ The sum of the squares of the legs of a right triangle is equal to the length of the hypotenuse

<u>Quadrilaterals</u>

Square	Perimeter:	$P = 4s$
	Area:	$A = s \cdot s = s^2$
Rectangle:	Perimeter:	$P = 2(l + w) = 2l + 2w$
	Area	$A = bh = lw$
Parallelogram	Perimeter	$P = 2(l + w) = 2l + 2w$
	Area	$A = bh$
Trapezoid	Perimeter	$P = b_1 + b_2 + s_1 + s_1$
	Area	$A = \frac{1}{2} + h(b_{1+}b_2) = h(\frac{b_{1+}b_2}{2})$
Circle	Circumference	$C = \pi d = 2\pi r$
	Area:	$A = \pi r^2$

<u>Solids</u>

Cube	Volume:	$V = s \cdot s \cdot s = s^3$
	Surface Area:	$SA = s \cdot s \cdot 6 = 6s\text{^}2$
Rectangular Solid	Volume:	$V = l \cdot w \cdot h$
	Surface Area:	$SA = 2(l \cdot w) + 2(l \cdot h) + 2(w \cdot h)$
Right Circular Cylinder	Volume:	$V = \pi r^2 h$
	Surface Area:	$SA = 2(\pi r^2) + h(2\pi r)$