Informal Geometry and Measurement

Undefined Terms (set, point, line, plane)

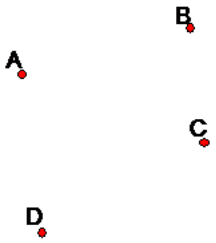
- A _____, which is represented as a dot, has location but not size.
- A_____ is an infinite set of points. Given any 3 distinct points on the same line, they are said to be **collinear**.
- A _____ is part of a line. It consists of two distinct points and all points between them.

Notation: $\angle ABC$ (angle ABC), ΔABC (triangle ABC) and ▭ ABCD (rectangle ABCD).

Rays are named: A B or A B

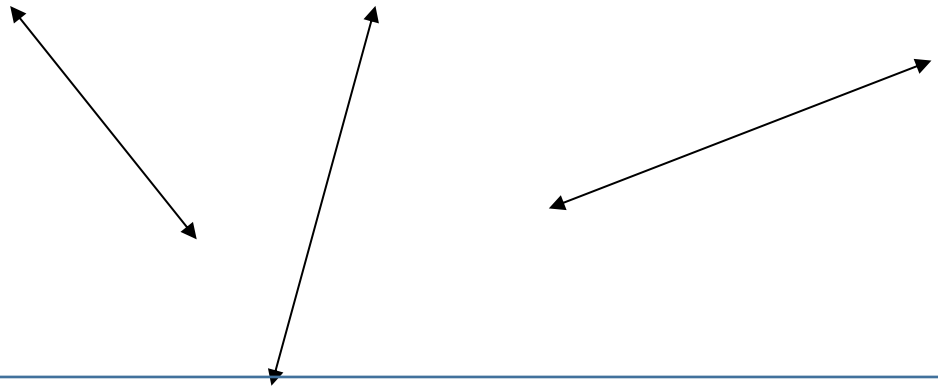
A **point** is represented by a dot and has a unique location. We use upper case letters to name points.

Example 1:



A **line** is an infinite set of points. (Symbol:)

Example 2:



Points that lie on the same line are called _____ (Symbol: $A - X - B$) Points that do not lie on the same line are called _____.

Example3: Consider noncollinear points A, B, and C. If each line must contain both points, what is the total number of lines that are determined by these points?

B •

A •

C•

A **line segment** is part of a line. (Symbol, $\overline{AB}$ where A and B are the _____)

Example 4: Given the following line segments: A B C

If $\overline{AC}$ = 22 and $\overline{BC}$=14 what does $\overline{AB}$ = ?

Example 5:

How many lines can be drawn through

1. point A?

2. both points A and B?

3. all points A, and B, and C ?

4. Where do $\overleftrightarrow{AB}$ and $\overleftrightarrow{AC}$ intersect?

Definition: An _____ is union of two rays that share a common endpoint.

FACTS:

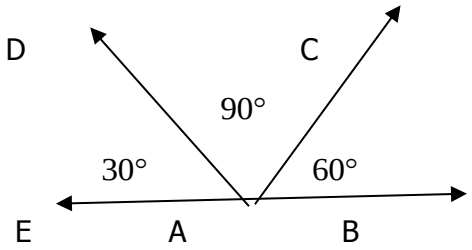
- The measure of an angle is a unique positive number.
- An angle whose measures less than $90°$ is an _____.
- An angle whose measures exactly $90°$ is a _____.
- An angle whose measures exactly $180°$ is a _____.
- If an angle measures between $90°$ and $180°$ it is an _____.
- A _____ is one whose measure is between $180°$ and $360°$.

Definition: (in your words define each)

(1) Perpendicular lines

(2) Parallel lines

Example 6: Use the following figure to answer each question.



Find the following:

a. Straight angle

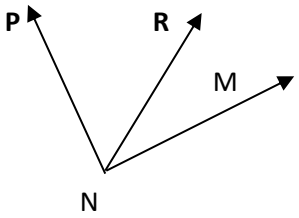
b. Right angle

c. Acute angle

d. Obtuse angle

If a point D lies in the interior of the angle ABC, then m ∠ ABD + m ∠ DBC = m ∠ ABC.

Example 7: Given**:**



a. If m ∠ MNP = $76°$ and m ∠ MNR = $47°$ find m ∠ PNR .

b. If m ∠ MNP = $76°$ and $\overrightarrow{NR}$ bisects ∠ MNP, find m ∠ PNR.

c. Find x, if m ∠ PNR = 2x + 9 and m ∠ RNM = 3x -2 and m ∠ PNM = $67°$.

Definition: Congruent angles ($\cong$, $\angle$s) are two angles with the same _____.

Definition: The _____ of an angle is the ray that separates the given angle into two congruent angles.

Definition: Two angles are _____ **angles** if the sum of their measures is $90°$. Each angle in the pair is known as the **complement** of the other angle.

Definition: Two angles are_____ **angles** if the sum of their measures is $180°$. Each angle in the pair is known as the **supplement** of the other angle.

Example 8: If the measure m $\angle A = (2x)°$, and the m $\angle B = (x - 6)°$, and $m\angle A$ and $m\angle B$ are complementary, find x and the measure of each angle.

Example 9: If the measure m $\angle A = (2y - 9)°$, and the m $\angle B = (7y)°$, and $m\angle A$ and $m\angle B$ are supplementary, find x and the measure of each angle.

Now Try from your Textbook starting on page 17 #'s: 11, 12,13,14,15, 32