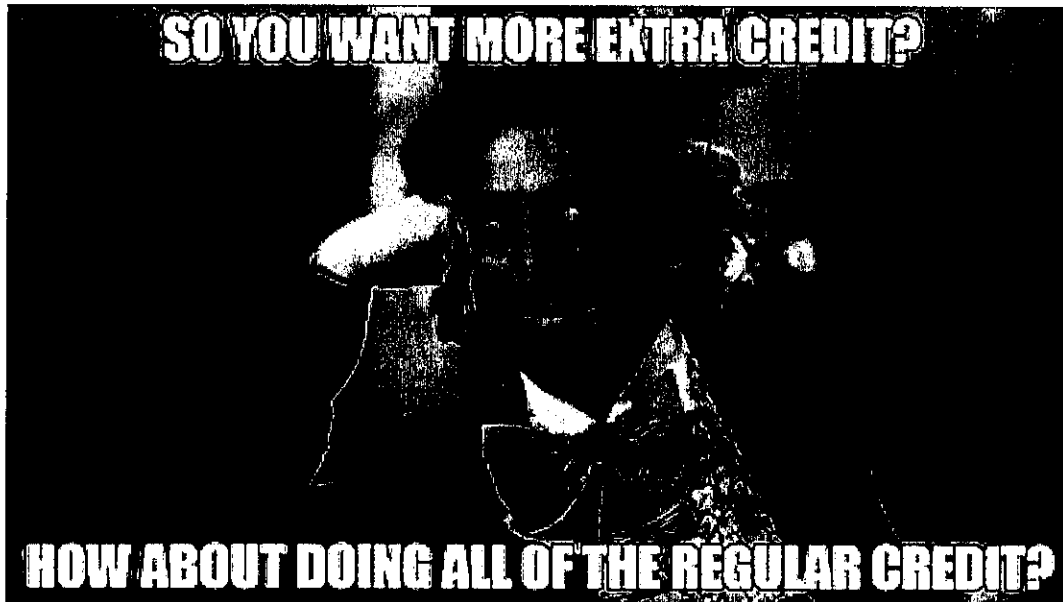


Name: KEY!

Hour: _____

Unit: Euclidean Geometry



Lesson 1-6, 1-7: Undefined Terms

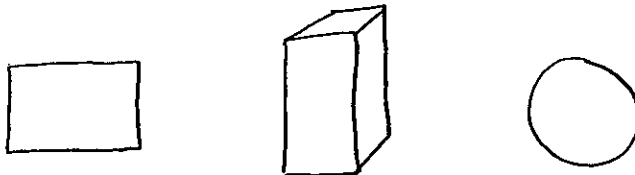
Vocabulary

Undefined Terms in Euclidean Geometry:

- 1) point 2) line 3) plane

From these three undefined terms we build ALL other things in Euclidean Geometry...

Examples



We assume postulates to be true since they are SO basic, and we must always prove theorems to be true. In the next unit, we will work on how to prove statements are true.

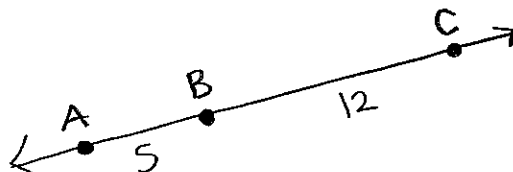
Lesson 1-8, 2-1, 2-4: Vocabulary

Vocabulary

Distance Postulate

- a. Uniqueness Property: on a line, there is a unique distance between 2 points
- b. Distance Formula: If two points on a line have coordinates x and y , the distance between them is $|x - y|$.
- c. Additive Property: If B is on AC , then $AB + BC = AC$


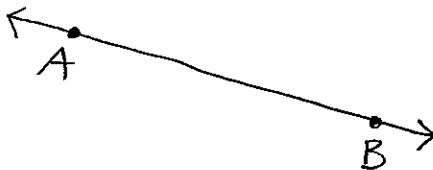
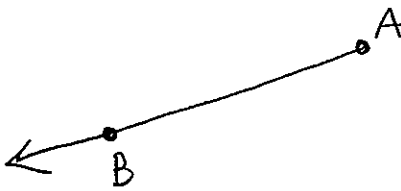
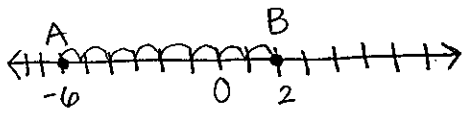
Example



$$\begin{array}{r} 5 + 12 = 17 \\ \downarrow \quad \downarrow \quad \downarrow \\ AB + BC = AC \end{array}$$

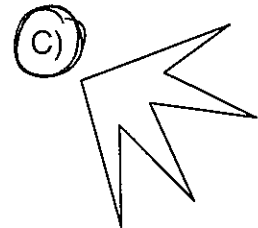
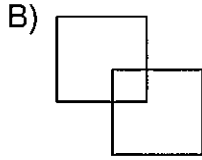
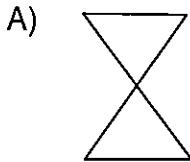
So, $AC = 17$.

Symbols & Their Meanings



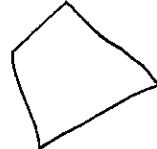
| Symbols | Words | Picture |
|--------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| \overline{AB} | segment (ends at A and at B) |  |
| $\longleftrightarrow AB$ | line (goes through A & B but continues in both directions) |  |
| \overrightarrow{AB} | ray (begins at A, continues in direction of B) |  |
| AB | distance (the distance or length bet. A and B) *a number!* |  $AB = 8$ |

Practice

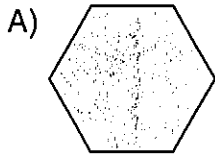
1. Based on the definition of (polygon) which of the following do you believe is a polygon?



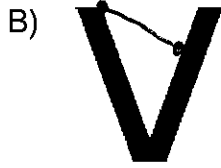
a figure w/ straight sides
that all fence in one
certain area.

ex's:  or  or 

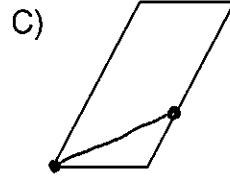
2. For each of the following sets figures, label convex or nonconvex. If non, illustrate why.



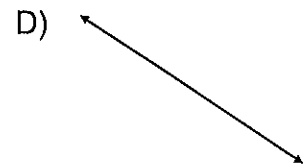
Convex



nonconvex



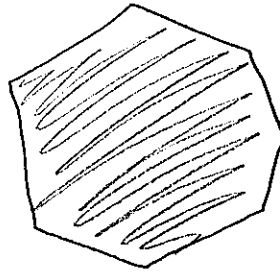
nonconvex



convex

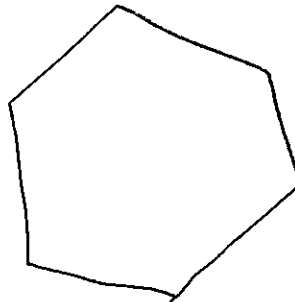
3. Draw a convex ^{7 sides} (heptagon).

↓
shaded
no dips

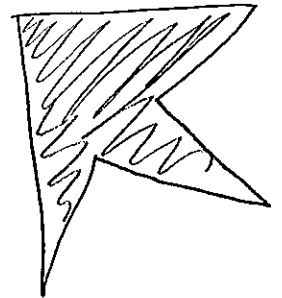


4. Draw a nonconvex ^{6 sides} (hexagon).

↓
not shaded
&/or
a dip



or



Lesson 2-5: Unions/Intersections

Vocabulary

Union: the set of elements which are in A, in B, OR in both A and B

Intersection: the set of elements which are shared by both A and B.

| | Words | Symbol | Example & Picture $X = \{1, 3, 5\}, Y = \{2, 3, 4\}, Z = \{5, 9\}$ |
|--------------|-------|--------|-----------------------------------------------------------------------------------|
| Union | OR | \cup | Ex: $X \cup Y$ $\{1, 2, 3, 4, 5\}$ Ex: $Y \cup Z$ $\{2, 3, 4, 5, 9\}$ |
| Intersection | AND | \cap | Ex: $X \cap Z$ $\{5\}$ Ex: $Y \cap Z$ \emptyset ; $\{\}$; empty/null set |

Practice

*always order #'s, do NOT include repeats!

1. Let $A = \{4, 6, 8\}$ and $B = \{10, 6, 4\}$.

a. Describe $A \cup B$. $\{4, 6, 8, 10\}$

b. Describe $A \cap B$. $\{4, 6\}$

2. Let $C = \{x \geq 3\}$ and $D = \{x \leq 7\}$.

a. Describe the numbers in the set $C \cup D$.

all real #'s

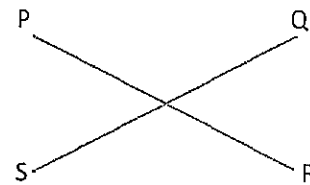
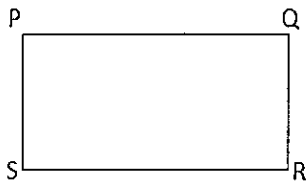
b. Describe the numbers in the set $C \cap D$.

$\{3 \leq x \leq 7\}$

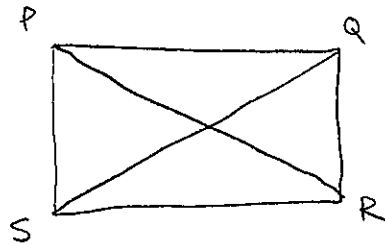
3. Let $E =$ rectangle PQRS

and

$F =$ line segments PR and QS.



a. Draw $E \cup F$.



b. Draw $E \cap F$.

