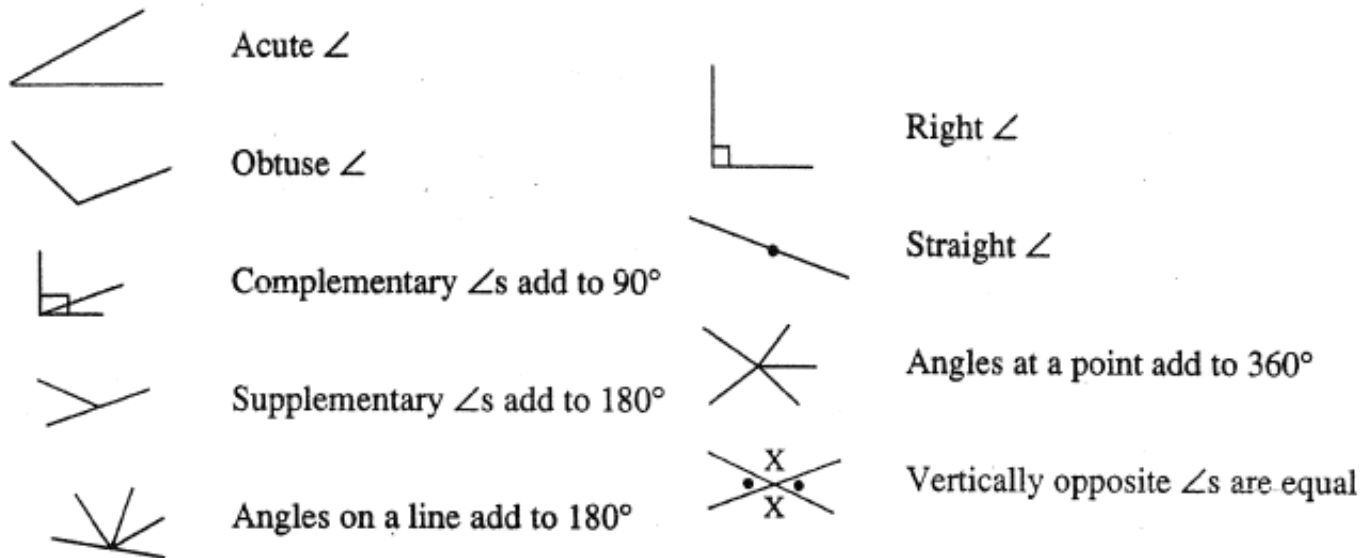


## Chapter 2: Geometry

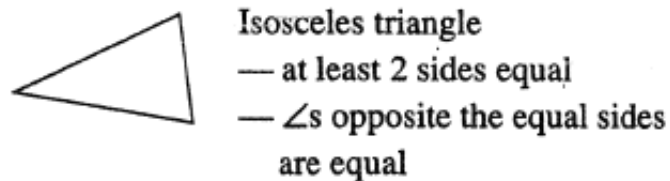
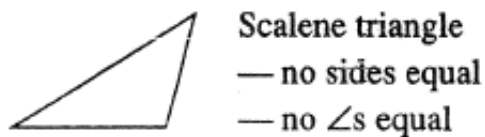
### 2.1 Parallel Lines

#### Angle Properties:

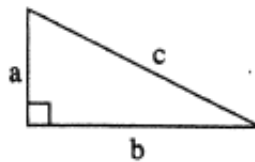


#### Triangle Properties:

$\angle$  sum of a triangle is  $180^\circ$

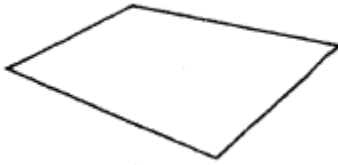


**Equilateral triangle**  
 — 3 sides equal  
 — 3  $\angle$ s equal (each  $60^\circ$ )



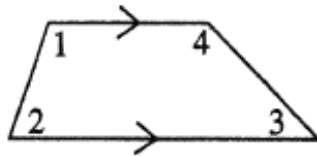
**Right triangle**  
 — 1 right angle  
 — hypotenuse is opposite the right angle  
 — Property of Pythagoras  
 $a^2 + b^2 = c^2$

**Quadrilateral Properties:**



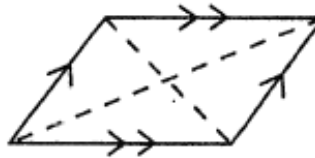
$\angle$  sum of a quadrilateral is  $360^\circ$

**Trapezoid**



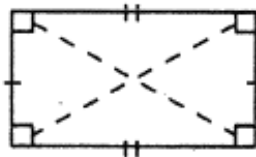
1 pair of  $\parallel$  sides  
 $\angle 1 + \angle 2 = 180^\circ$ ,  $\angle 3 + \angle 4 = 180^\circ$   
 (interior  $\angle$ s on same side of transversal)

**Parallelogram**



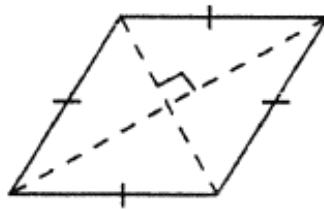
opposite sides equal and  $\parallel$   
 opposite  $\angle$ s are equal  
 consecutive  $\angle$ s add to  $180^\circ$   
 diagonals bisect each other

**Rectangle**



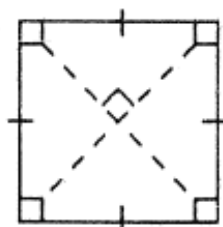
opposite sides equal and  $\parallel$   
 each  $\angle$  is  $90^\circ$   
 diagonals are equal and bisect each other

**Rhombus**



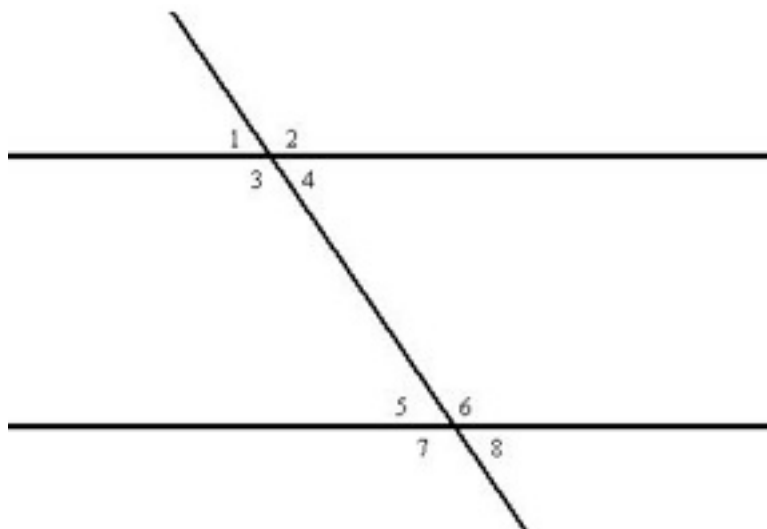
parallelogram with 4 equal sides  
 diagonals bisect at right  $\angle$ s  
 diagonals bisect the  $\angle$ s of the rhombus

**Square**



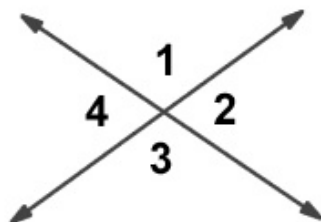
rhombus with 4 right  $\angle$ s, or  
 rectangle with 4 equal sides

Parallel Lines



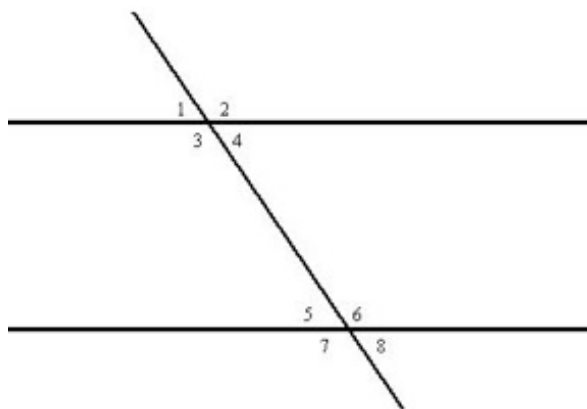
FACT: Corresponding Angles are Equal

Proof #1: Vertically Opposite Angles are Equal



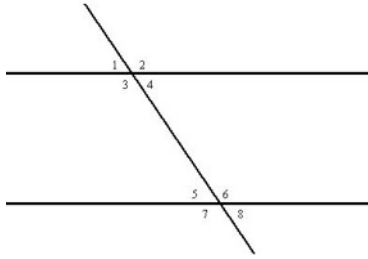
Statement	Reason

Proof #2: Alternate Interior Angles are Equal



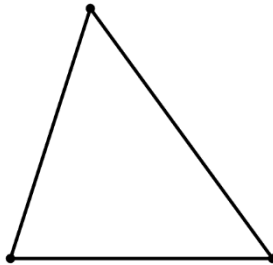
Statement	Reason

Proof #3: Co-Interior Angles are Supplementary



Statement	Reason

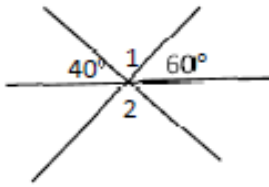
Proof #4: Angles in a Triangle add to 180 degrees



Statement	Reason

**Examples:** Find each indicated angle and give a reason:

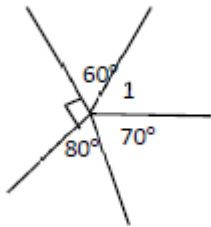
a)



1 = \_\_\_\_\_

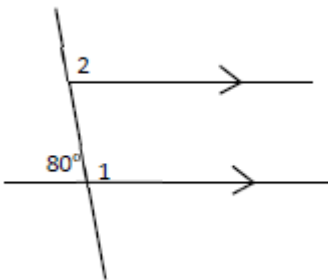
2 = \_\_\_\_\_

b)



1 = \_\_\_\_\_

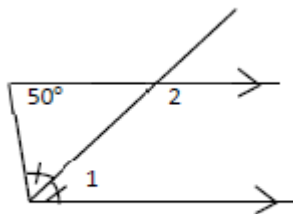
c)



1 = \_\_\_\_\_

2 = \_\_\_\_\_

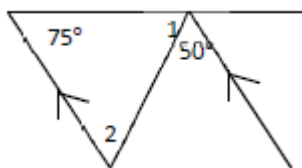
d)



1 = \_\_\_\_\_

2 = \_\_\_\_\_

e)



1 = \_\_\_\_\_

2 = \_\_\_\_\_