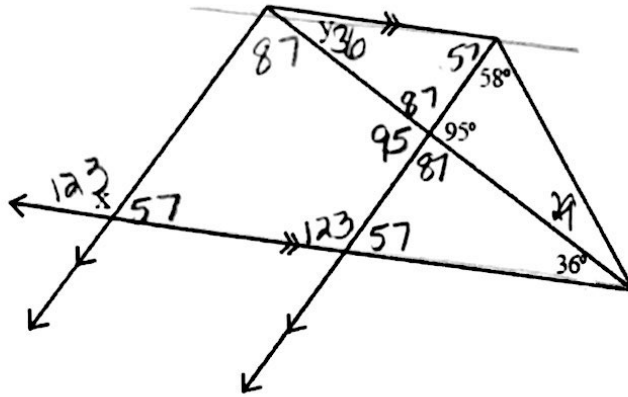


STATION #1:

Geometric Properties

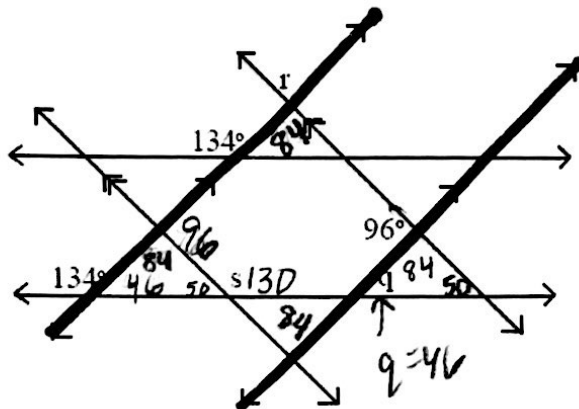
1. Find the values of x and y in the picture.



$$x = 123$$

$$y = 36$$

2. Find the values of q , r , and s in the picture.



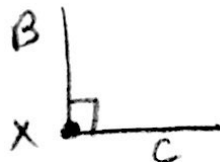
$$s = 130$$

$$q = 46$$

$$r = 84$$

3. Draw and label a picture to represent the following:

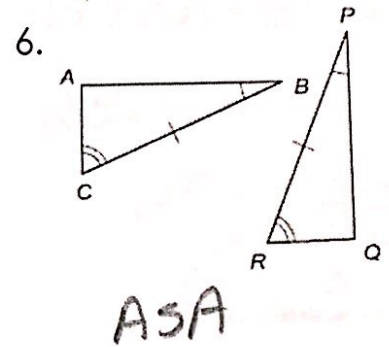
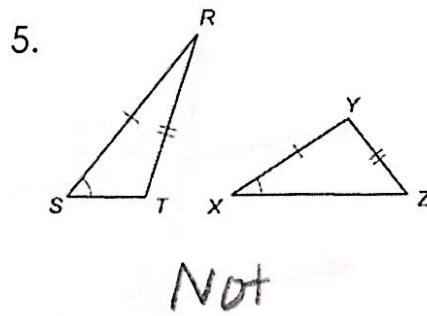
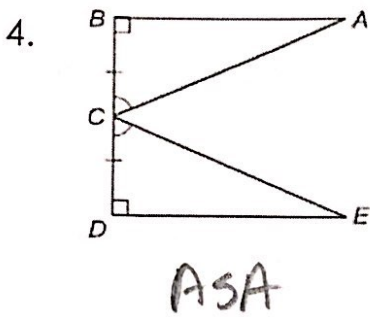
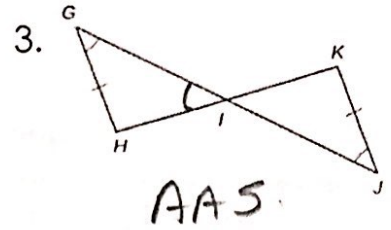
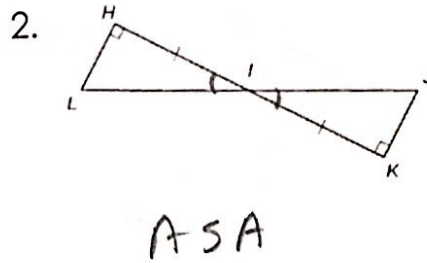
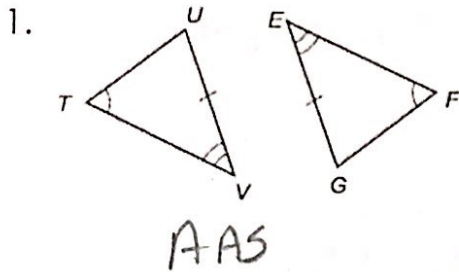
- Line WZ includes points X and Y so that X is the midpoint of segment WY and Y is the midpoint of XZ .
- Angles WXA and BXY are obtuse vertical angles.
- Angles AXY and YXC are complementary.
- BXC is a right angle.



STATION #2:

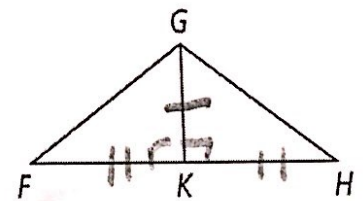
Triangle Congruence

Determine whether each pair of triangles is congruent. If so, write a congruence statement and explain why the triangles are congruent. If it is not possible, write not possible.



Write a two column proof.

4. Given: \overline{GK} is the perpendicular bisector of \overline{FH} .
 Prove: $\overline{FG} \cong \overline{HG}$



①	① Given
② $\overline{GK} \cong \overline{GK}$	② Refl. Prop
③ $FK = KH$ $\angle GKF \cong \angle GKH$ (right)	③ Def. \perp bisector
④ $\angle GKF \cong \angle GKH$	④ All rt \angle are \cong
⑤ $\triangle GKF \cong \triangle GKH$	⑤ SAS
⑥ $\overline{FG} \cong \overline{HG}$	⑥ CPCTC

STATION #5:

Parallel Lines and Transversals

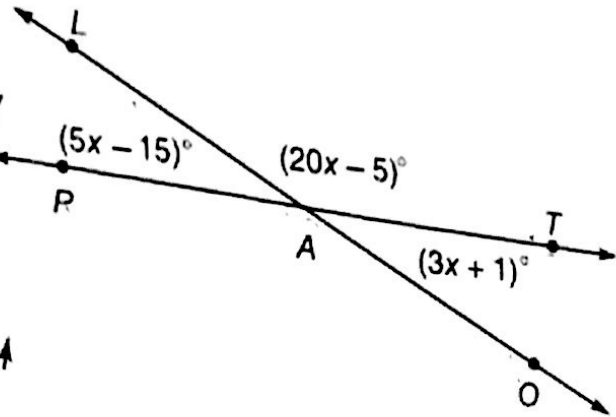
1. Use the figure to find:

a. $x = 8$

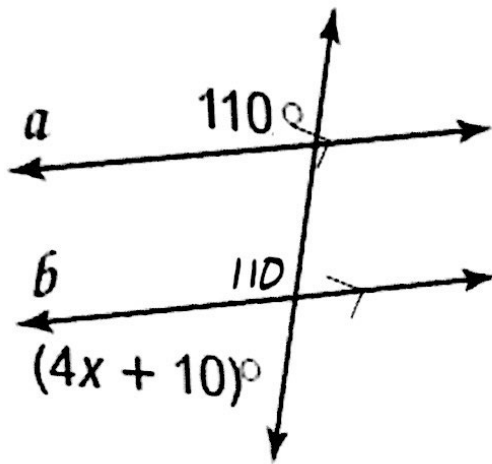
b. $m\angle LAT = 20(8) - 5 = 155$

c. $m\angle TAO = 3(8) + 1 = 25$

d. $m\angle PAO = 155$



2. Find x .



$$5x - 15 + 20x - 5 = 180$$

$$25x - 20 = 180$$

$$25x = 200$$

$$x = 8$$

$$4x + 10 + 110 = 180$$

$$4x + 120 = 180$$

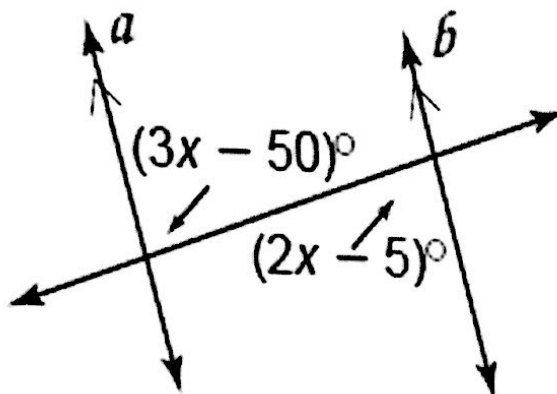
$$4x = 60$$

$$x = 15$$

3. Find x .

$$3x - 50 = 2x - 5$$

$$x = 45$$

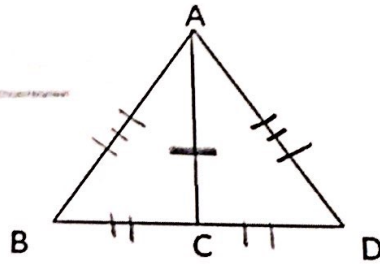


STATION #6:

Proofs

1. Given: C is the midpoint of BD, $AB \cong AD$

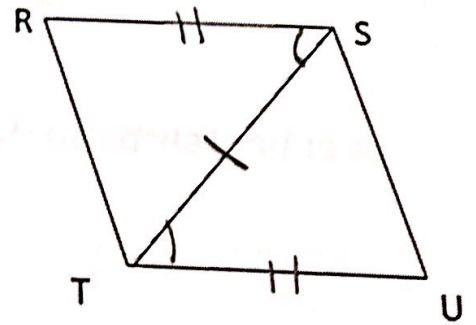
Prove:
 $\triangle ABC \cong \triangle ADC$



- | | |
|---------------------------------------|---------------------|
| ① | ① Given |
| ② $\overline{AC} \cong \overline{AC}$ | ② Ref. Prop |
| ③ $BC = CD$ | ③ Defn midpoint |
| ④ $\overline{BC} \cong \overline{CD}$ | ④ Def. \cong segs |
| ⑤ $\triangle ABC \cong \triangle ADC$ | ⑤ SSS. |

2. Given: $RS \parallel TU$, $\overline{RS} \cong \overline{TU}$

Prove:
 $\triangle RST \cong \triangle UTS$



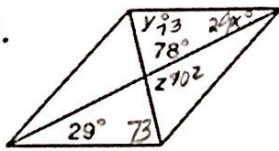
- | | |
|---------------------------------------|---|
| ① | ① Given |
| ② $\overline{ST} \cong \overline{ST}$ | ② Ref Prop |
| ③ $\angle RST \cong \angle STU$ | ③ Alt Int \angle of \parallel lines are \cong |
| ④ $\triangle RST \cong \triangle UTS$ | ④ SAS. |

STATION #3:

Parallelograms

If each quadrilateral is a parallelogram, find the values of x , y , and z .

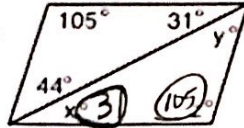
1.



$x = 29$

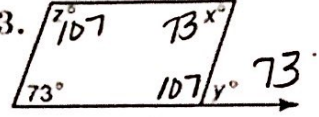
$z = 102^\circ$
 $x = 29^\circ$
 $y = 73^\circ$

2.



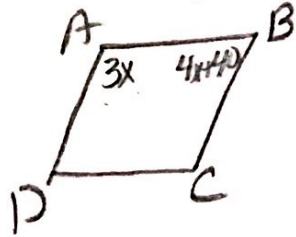
$x = 31$
 $z = 105$
 $y = 44$

3.



$x = 73$
 $y = 73$
 $z = 107$

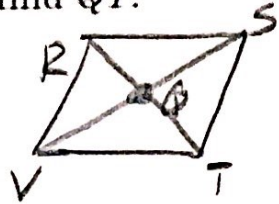
4. In parallelogram $ABCD$, $m\angle A = 3x$ and $m\angle B = 4x + 40$. Find the measure of angles A , B , C , and D .



$3x + 4x + 40 = 180$
 $7x = 140$
 $x = 20$

$m\angle A = 60$
 $m\angle C = 60$
 $m\angle B = 120$
 $m\angle D = 120$

5. In parallelogram $RSTV$, diagonals \overline{RT} and \overline{VS} intersect at Q . If $RQ = 5x + 1$ and $QT = 3x + 15$, find QT .

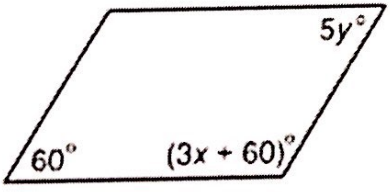


$5x + 1 = 3x + 15$
 $2x = 14$
 $x = 7$

$QT = 3(7) + 15 = 36$

Find the values of x and y that ensure each quadrilateral is a parallelogram.

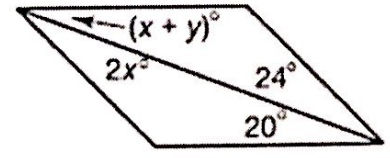
6.



$5y = 60$
 $y = 12$

$3x + 60 = 120$
 $3x = 60$
 $x = 20$

7.



$2x = 24$
 $x = 12$

$x + y = 24$
 $12 + y = 24$
 $y = 12$