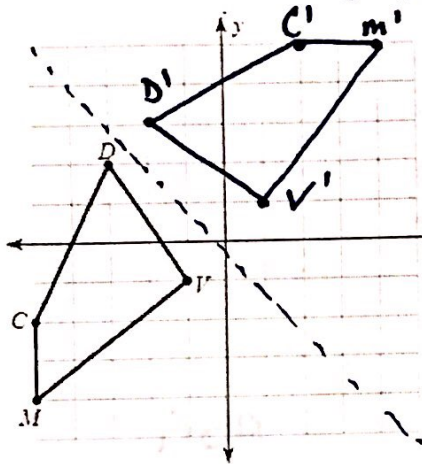


Unit 2 Review: Transformations & Congruence

Learning Target #1: Rigid Transformations

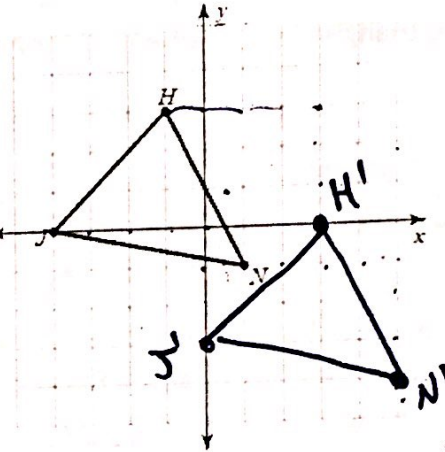
Find the coordinates of the vertices of each figure after the given transformation.

1. Reflection across $y = -x$ $(-y, -x)$

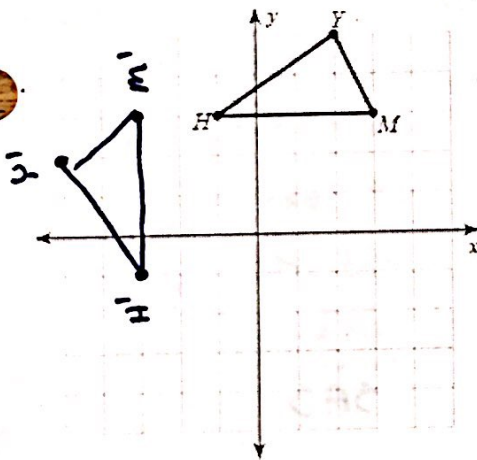


- $D (-3, 2) \rightarrow (-2, 3)$
- $C (-5, -2) \rightarrow (2, 5)$
- $M (-5, -4) \rightarrow (4, 5)$
- $V (-1, -1) \rightarrow (1, 1)$

2. $(x, y) \rightarrow (x + 4, y - 3)$

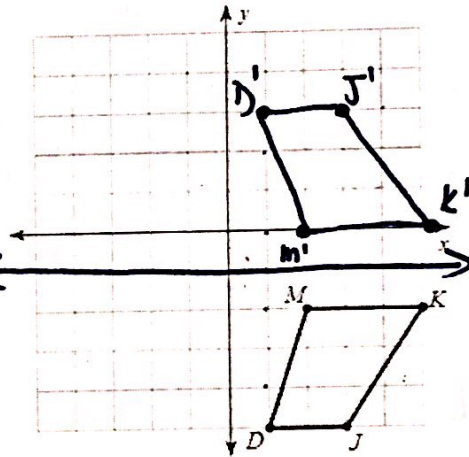


3. Rotation 90° counter clockwise $(-y, x)$



- $H (-1, 3) \rightarrow (-3, -1)$
- $Y (2, 5) \rightarrow (-5, 2)$
- $M (3, 3) \rightarrow (-3, 3)$

4. Reflection across $y = -1$



Write a rule to describe each transformation.

5. $D(-2, -2), I(-3, 0), S(1, 0), W(3, -4)$

$D'(2, 2), I'(3, 0), S'(-1, 0), W'(-3, 4)$

$(-x, -y)$

7. $X(-3, -1)$

$X'(5, -1)$

$(x+8, y)$

6. $I(-4, 2), W(-4, 3), L(-1, 4), G(0, -1)$

$I'(4, 2), W'(4, 3), L'(1, 4), G'(0, -1)$

$(-x, y)$

8. $N(1, 4), W(1, 5), Q(3, 5)$

$N'(-1, -2), W'(-1, -1), Q(1, -1)$

$(x-2, y-6)$

Learning Target #2: Congruent Triangles & Proofs

Complete each congruence statement by naming the corresponding angle or side.

9. $\triangle LKJ \cong \triangle LBC$

10. $\triangle VWX \cong \triangle VIJ$

11. $\triangle KLM \cong \triangle LKC$

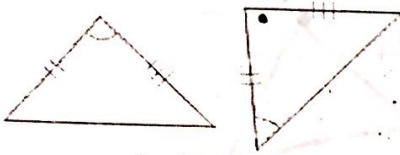
$\angle JLK \cong \underline{\angle CLB}$

$\overline{WX} \cong \underline{\overline{IJ}}$

$\angle M \cong \underline{\angle C}$

State if the two triangles are congruent. If they are, state how you know.

12.



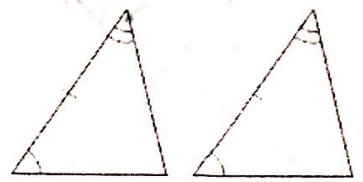
Not \cong

13.



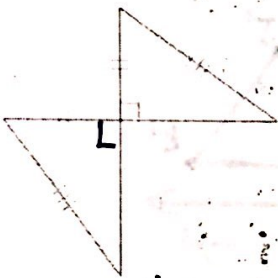
HL

14.



ASA

15.



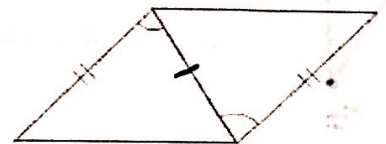
HL

16.



AAS

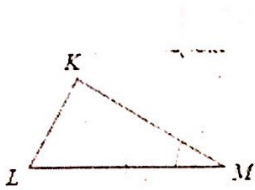
17.



SAS

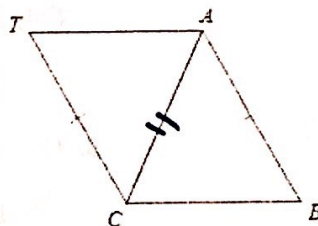
State what additional information is required in order to know that the triangles are congruent for the reason given.

18. ASA



$\angle L \cong \angle W$

19. SSS



$\overline{AT} \cong \overline{CB}$

20. HL



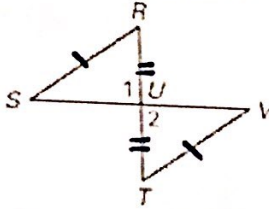
$\overline{KJ} \cong \overline{IX}$

Complete the proofs.

21.

Given: $\overline{RT} \perp \overline{SV}$, $\overline{RS} \cong \overline{TV}$, $\overline{RU} \cong \overline{TU}$

Prove: $\triangle RUS \cong \triangle TUV$



Statements

1. $\overline{RT} \perp \overline{SV}$
2. $\angle 1$ and $\angle 2$ are right angles.
3. $\overline{RS} \cong \overline{TV}$ $\overline{RU} \cong \overline{TU}$
4. $\triangle RUS \cong \triangle TUV$

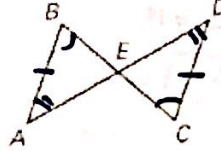
Reasons

1. Given
2. Def of Perp.
3. Given
4. HL

22.

Given: $\overline{AB} \parallel \overline{DC}$, $\overline{AE} \cong \overline{DE}$

Prove: $\overline{BE} \cong \overline{CE}$



Statements

1. $\overline{AB} \parallel \overline{CD}$
2. $\angle ABE \cong \angle DCE$
3. $\overline{AB} \cong \overline{DC}$
4. $\angle BAE \cong \angle CDE$
5. $\triangle AEB \cong \triangle DEC$
6. $\overline{AE} \cong \overline{DE}$

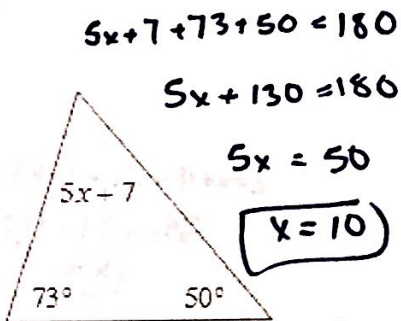
Reasons

1. Given
2. Alt Int Angles
3. Given
4. Alt Int Angles
5. ASA
6. CPCTC

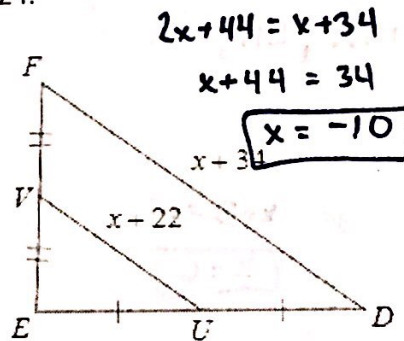
Learning Target #3: Triangle Relationships

Solve for x.

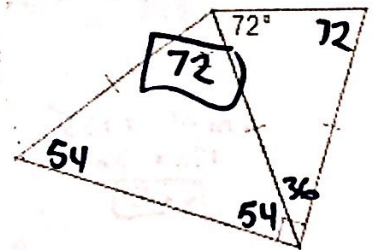
23.



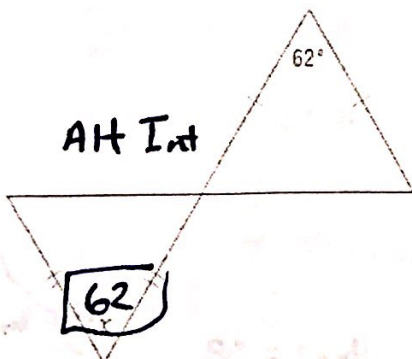
24.



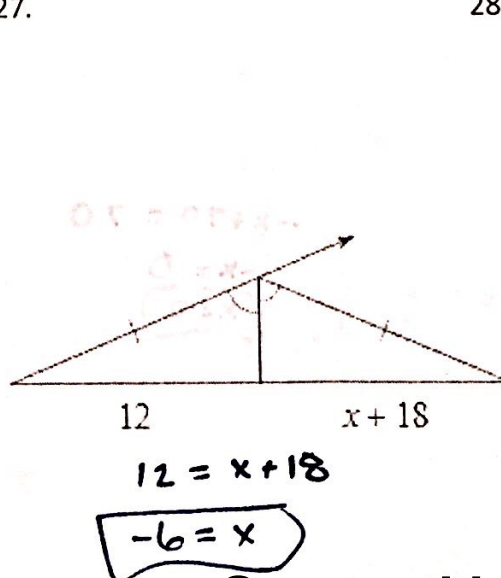
25.



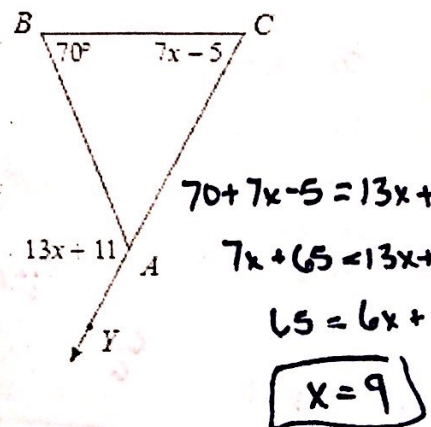
26.



27.

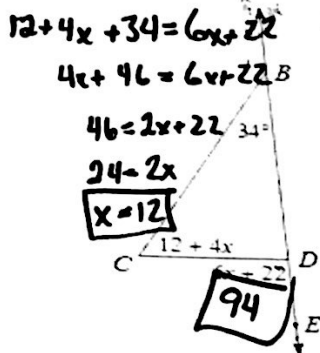


28.

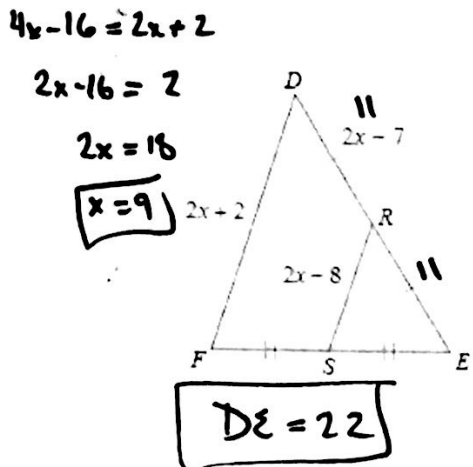


Solve for the indicated measure.

29. $m\angle EDC$

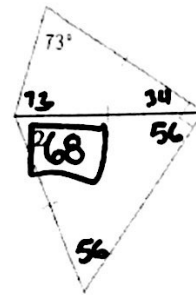


30. \overline{DE}



31. $m\angle 2$

$m\angle 2 = x + 76$



32. Determine if the following side lengths could form a triangle.

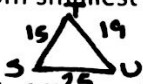
a. 9, 7, 13
Yes

b. 15, 1, 15
Yes

c. 9, 2, 5
No

d. 81, 94, 184
No

33. Triangle STU has the following side lengths: $\overline{TU} = 19$, $\overline{SU} = 25$, & $\overline{ST} = 15$. Order the angles in the triangle from smallest to largest.



$\angle U, \angle S, \angle T$

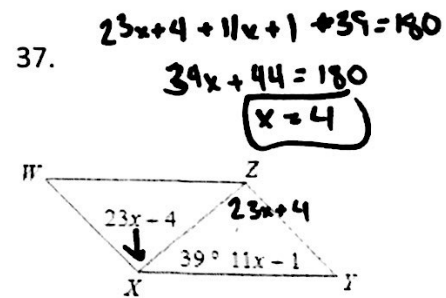
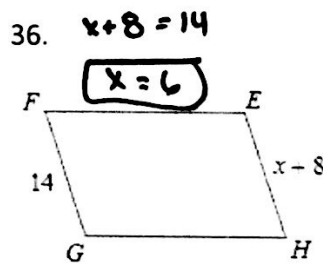
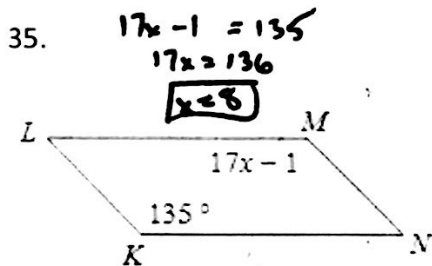
34. Triangle MLK has the following angle measurements: $m\angle M = 64^\circ$, $m\angle L = 48^\circ$, & $m\angle K = 68^\circ$. Name the largest and smallest side in each triangle.



$\overline{MK}, \overline{LK}, \overline{ML}$

Learning Target #4: Parallelograms

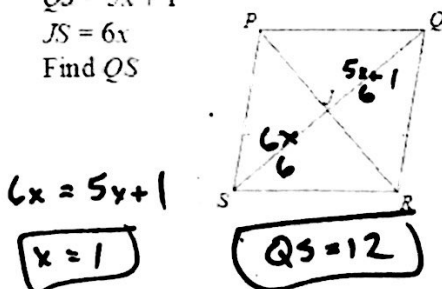
Solve for x. Each figure is a parallelogram.



Solve for x.

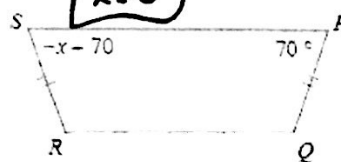
38.

$QJ = 5x + 1$
 $JS = 6x$
Find QS



39.

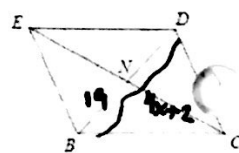
$-x + 10 = 70$
 $-x = 60$
 $x = -60$



40.

$NB = 19$
 $DB = 4x + 2$

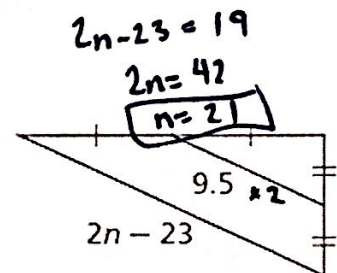
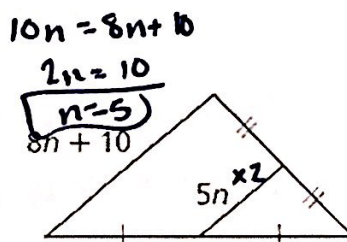
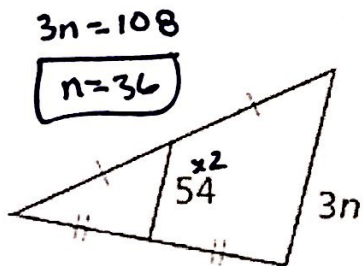
$4x + 2 = 38$
 $4x = 36$
 $x = 9$



Rule Practice:

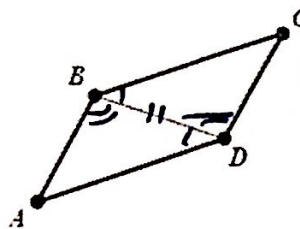
41. What is a rule for 90 degree clockwise rotation? $(y, -x)$
42. What is the rule for 180 degree rotation? $(-x, -y)$
43. What is the rule for a translation up 6 and right 4? $(x+4, y+6)$
44. What is the rule for a 270 degree clockwise rotation? 90 CCW
 $(-y, x)$
45. What is the rule for a reflection over $y=x$? (y, x)
46. What is the rule for a reflection over the y-axis? $(-x, y)$
47. What is the rule for a reflection over $y=-x$? $(-y, -x)$
48. What is the rule for a reflection over the x-axis? $(x, -y)$

Find the Value of n:



Given: ABCD is a parallelogram

Prove: $\angle A \cong \angle C$



Statements	Reasons
1) $ABCD$ is a \square	1) Given
2) $\overline{AB} \parallel \overline{CD}$, $\overline{AD} \parallel \overline{CB}$	2) Definition of a parallelogram
3) $\angle ABD \cong \angle CDB$	3) Alternate Interior Angles are congruent
4) $\angle ADB \cong \angle CBD$	4) <u>Alt Int Angles</u>
5) $\overline{BD} \cong \overline{BD}$	5) <u>Reflexive</u>
6) $\triangle ABD \cong \triangle CDB$	6) <u>ASA</u>
7) $\angle A \cong \angle C$	7) CPCTC