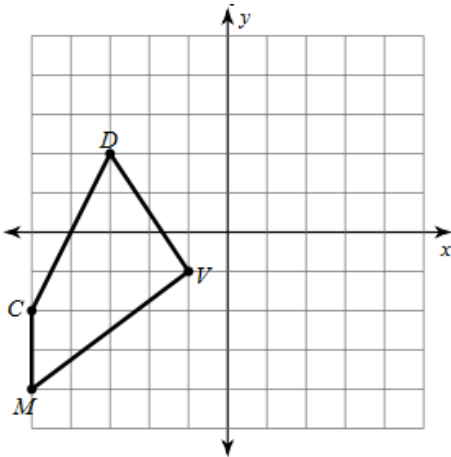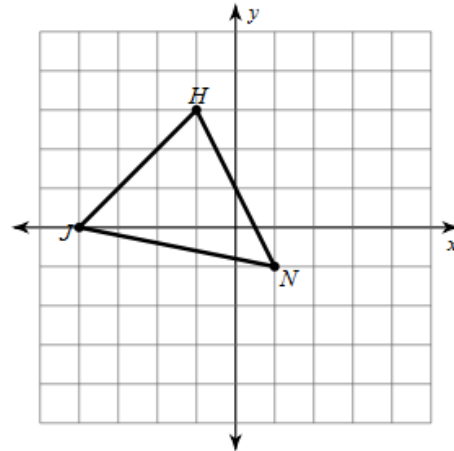Name:_____

Date:_____ Block:_____

Unit 2 Review: Transformations & Congruence

Learning Target #1: Rigid Transformations

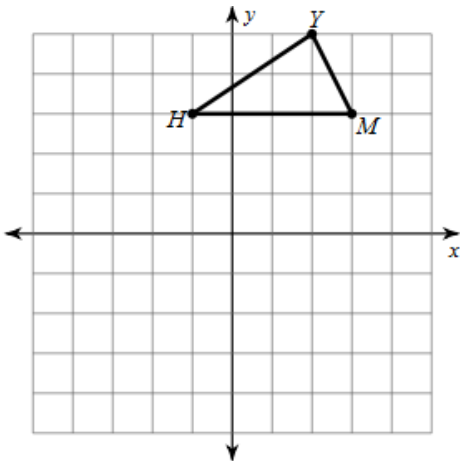Find the coordinates of the vertices of each figure after the given transformation.
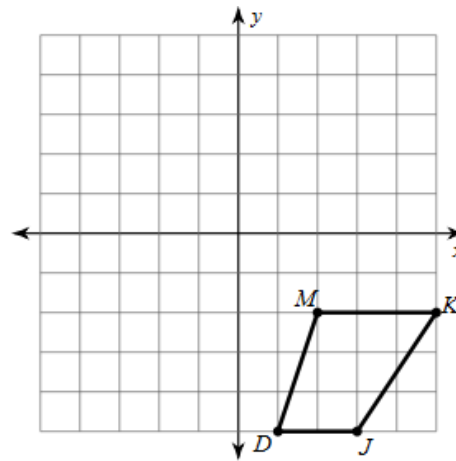
1. Reflection across y = -x

2. (x, y) → (x + 4, y – 3)

3. Rotation 90° counter clockwise

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)

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)

7. X(-3, -1)

   X'(5, -1)

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

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

Learning Target #2: Congruent Triangles & Proofs

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

9. $\Delta LKJ \cong \Delta LBC$

$\angle JLK \cong$ _____

10. $\Delta VWX \cong \Delta VIJ$

$\overline{WX} \cong$ _____

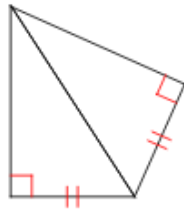11. $\Delta KLM \cong \Delta LKC$

$\angle M \cong$ _____

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

12.
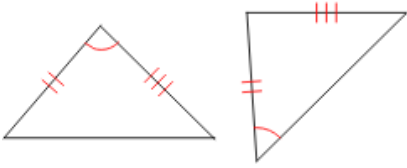
13.

14.
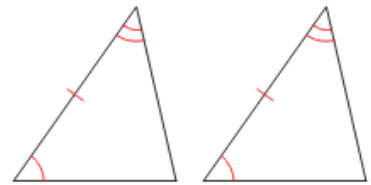
15.

16.

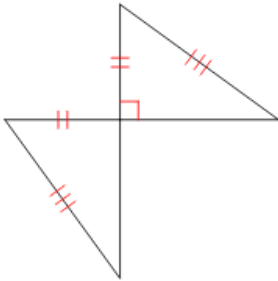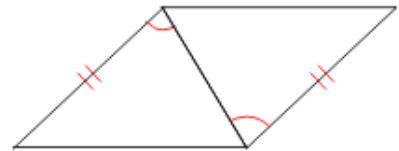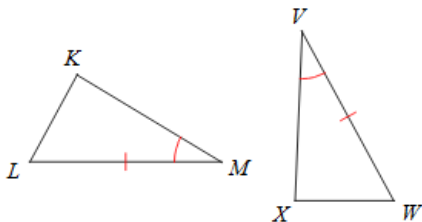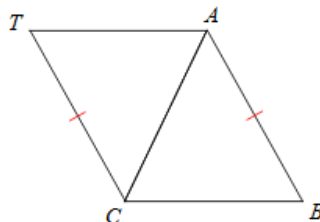17.

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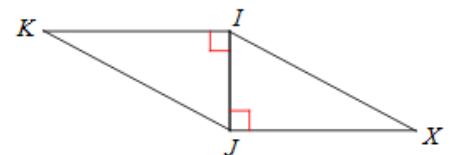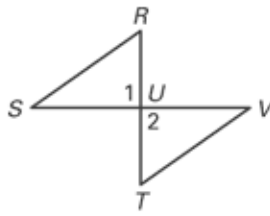
18. ASA

19. SSS

20. HL

Complete the proofs.

21.

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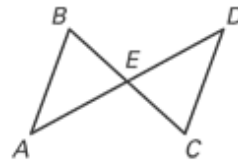
Prove: $\triangle RUS \cong \triangle TUV$

Statements	Reasons
1. $\overline{RT} \perp \overline{SV}$	1. _____
2. $\angle 1$ and $\angle 2$ are right angles.	2. _____
3. _____	3. _____
4. $\triangle RUS \cong \triangle TUV$	4. _____

22.

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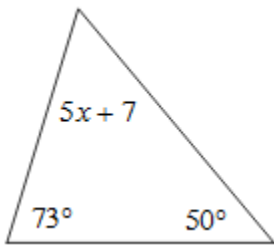
Prove: $\overline{AE} \cong \overline{DE}$

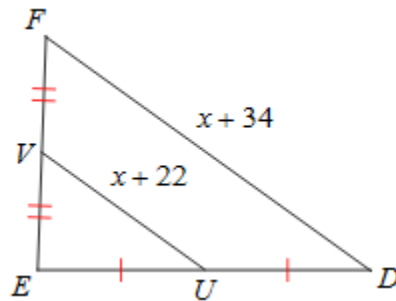| Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$	1. _____
2. $\angle ABE \cong \angle DCE$	2. _____
3. $\overline{AB} \cong \overline{DC}$	3. _____
4. $\angle BAE \cong \angle CDE$	4. _____
5. $\triangle AEB \cong \triangle DEC$	5. _____
6. $\overline{AE} \cong \overline{DE}$	6. _____

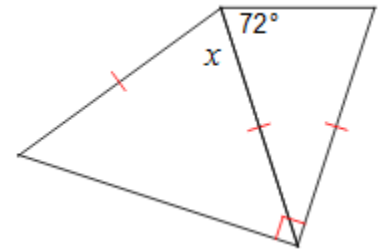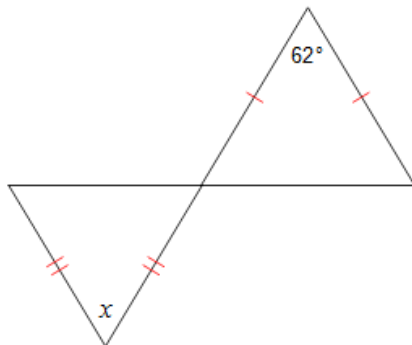Learning Target #3: Triangle Relationships
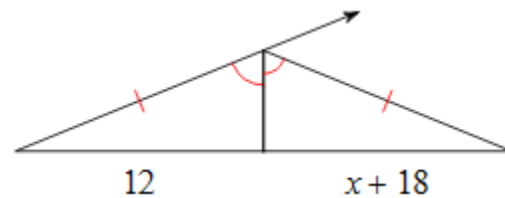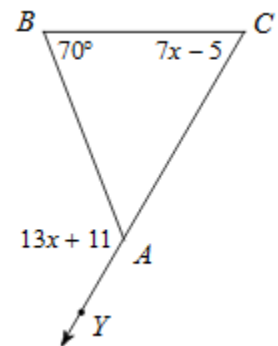
Solve for x.

23.

24.

25.

26.

27.

28.

Solve for the indicated measure.

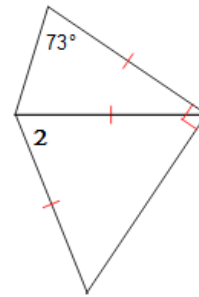29. $m\angle EDC$ | 30. $\overline{DE}$ | 31. $m\angle 2$

$m\angle 2 = x + 76$

(Figures for 29, 30, 31)
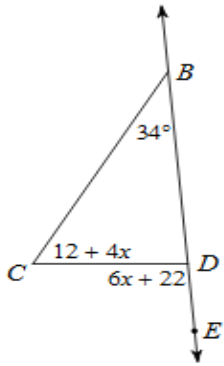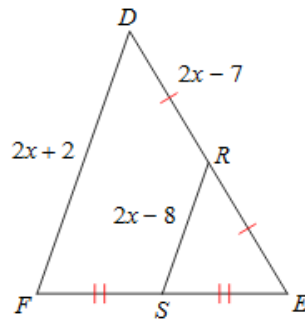
32. Determine if the following side lengths could form a triangle.

a. 9, 7, 13   b. 15, 1, 15   c. 9, 2. 5   d. 81, 94, 184
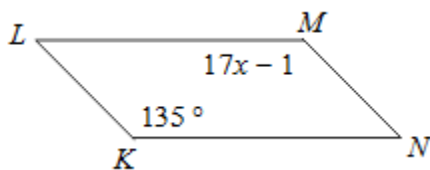
33. Triangle STU has the following side lengths: $\overline{TU} = 19, \overline{SU} = 25, \& \overline{ST} = 15$. Order the angles in the triangle from smallest to largest.

34. Triangle MLK has the following angle measurements: $m\angle M = 64°, \ m\angle L = 48°, \& \ m\angle K = 68°$. Name the largest and smallest side in each triangle.
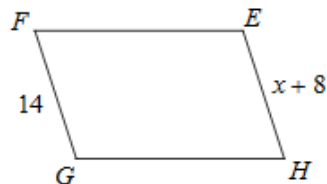
Learning Target #4: Parallelograms
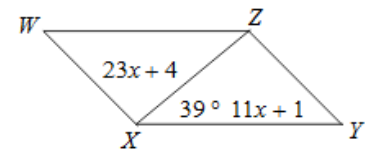
Solve for x. Each figure is a parallelogram.

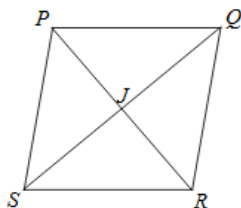35.   36.   37.

(Parallelogram LMNK with $17x - 1$ and $135°$)

(Parallelogram FEHG with 14 and $x + 8$)

(Figure WXYZ with $23x + 4$, $39°$, $11x + 1$)

Solve for x.

38.   39.   40.

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

(Parallelogram PQRS with diagonals meeting at J)

(Figure SPQR with $-x + 70$ and $70°$)

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

(Figure EDCB with N)
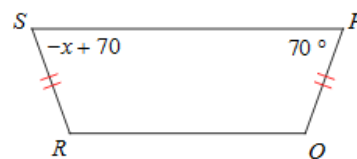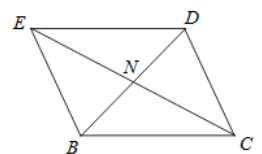
Rule Practice:

41. What is a rule for 90 degree clockwise rotation?

42. What is the rule for 180 degree rotation?

43. What is the rule for a translation up 6 and right 4?

44. What is the rule for a 270 degree clockwise rotation?

45. What is the rule for a reflection over y=x?

46. What is the rule for a reflection over the y-axis?

47. What is the rule for a reflection over y=-x?

48. What is the rule for a reflection over the x-axis?

Find the Value of n:
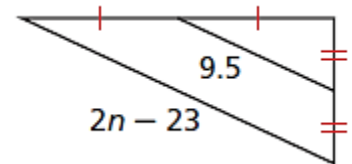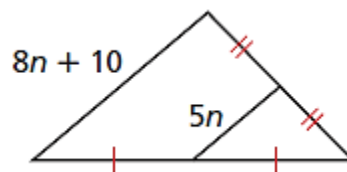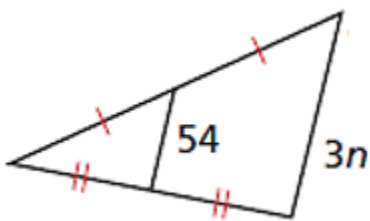
Given: ABCD is a parallelogram

Prove: $\angle A \cong \angle C$
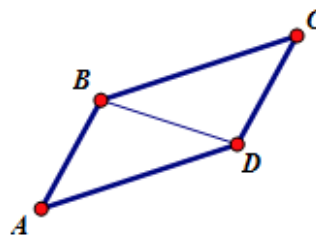
Statements	Reasons
1)	1) Given
2) $\overline{AB} \parallel \overline{CD}$, $\overline{AD} \parallel \overline{CB}$	2) Definition of a parallelogram
3)	3) Alternate Interior Angles are congruent
4) $\angle ADB \cong \angle CBD$	4)
5) $\overline{BD} \cong \overline{BD}$	5)
6)	6)
7)	7) CPCTC