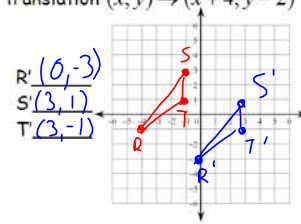
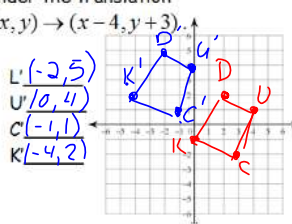
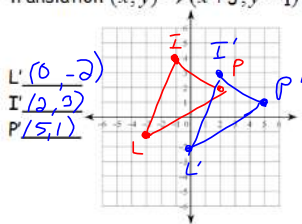


NAME _____ DATE _____

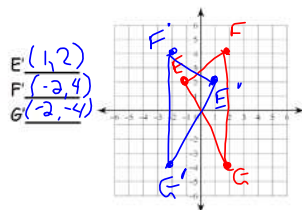
CCM2: UNIT 2 STUDY GUIDE**TRANSFORMATIONS****TRANSLATIONS**

1. Graph each figure and the image under the given translation. Name the new coordinates.
- a. $\triangle LIP$ with vertices $L(-3, -1)$, $I(-1, 4)$, and $P(2, 2)$ under the translation $(x, y) \rightarrow (x+3, y-1)$.
- b. Quadrilateral LUCK with vertices $D(2, 2)$, $U(4, 1)$, $C(3, -2)$, and $K(0, -1)$ under the translation $(x, y) \rightarrow (x-4, y+3)$.
- c. $\triangle RST$ with vertices $R(-4, -1)$, $S(-1, 3)$, and $T(-1, 1)$ under the translation $(x, y) \rightarrow (x+4, y-2)$.

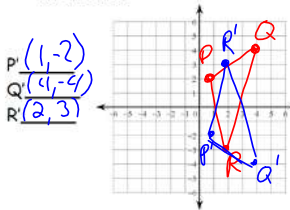
**REFLECTIONS**

2. Graph each figure and its image under the given reflection. Find the coordinates of the vertices of each image. Label all points.

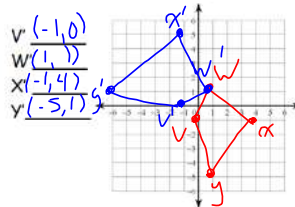
- a. $\triangle EFG$ if $E(-1, 2)$, $F(2, 4)$ and $G(2, -4)$ reflected over the y-axis.



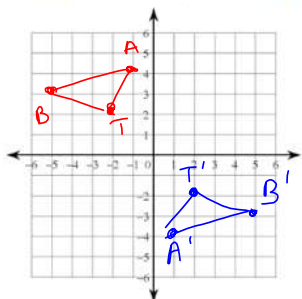
- b. $\triangle PQR$ if $P(1, 2)$, $Q(4, 4)$ and $R(2, -3)$ reflected over the x-axis.



- c) Quadrilateral VWXY if $V(0, -1)$, $W(1, 1)$, $X(4, -1)$, and $Y(1, -5)$ reflected over the line $y = x$.

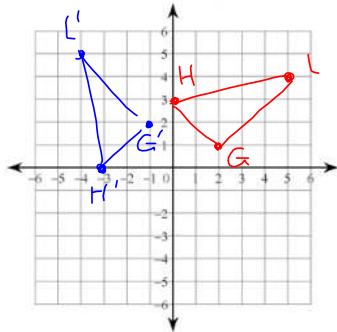
**ROTATIONS**

- 3) Rotate $\triangle BAT$ where $B(-5, 3)$, $A(-1, 4)$, and $T(-2, 2)$ 180° counterclockwise about the origin.



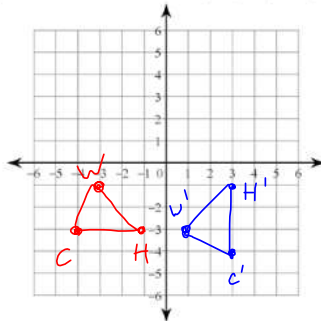
$$\begin{array}{l} B'(5, -3) \\ A'(1, -4) \\ T'(2, -2) \end{array}$$

- 4) Rotate $\triangle GHL$, where $G(2,1)$, $H(0,3)$, and $L(5,4)$, 90° counterclockwise about the origin.



$$\begin{aligned} G' &(-1, 2) \\ H' &(-3, 0) \\ L' &(-4, 5) \end{aligned}$$

- 5) Rotate $\triangle WCH$, where $W(-3,-1)$, $C(-4,-3)$, and $H(-1,-3)$, 270° clockwise about the origin.



$$\begin{aligned} W' &(1, -3) \\ C' &(3, -4) \\ H' &(3, -1) \end{aligned}$$

PARALLEL LINES CUT BY A TRANSVERSAL

Identify each pair of angles as alternate interior, alternate exterior, same-side interior, supplementary, or vertical.

1. $\angle 6$ and $\angle 10$

Alt. Ext.

3. $\angle 14$ and $\angle 6$

Alt. Int.

5. $\angle 12$ and $\angle 15$

S.S. Int.

2. $\angle 14$ and $\angle 13$

SS Int.

4. $\angle 1$ and $\angle 5$

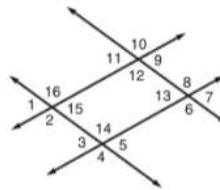
Alt. Ext.

6. $\angle 2$ and $\angle 16$

Vertical

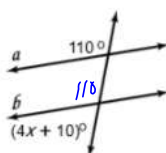
7. $\angle 11$ and $\angle 12$

Supp. $\angle$ s



Find x so that $a \parallel b$.

8.



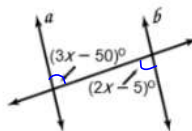
$$110 + 4x + 10 = 180$$

$$4x + 120 = 180$$

$$4x = 60$$

$$x = 15$$

9.

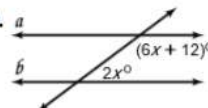


$$3x - 50 = 2x - 5$$

$$x - 50 = -5$$

$$x = 45$$

10.

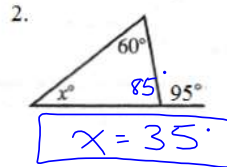
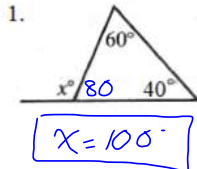
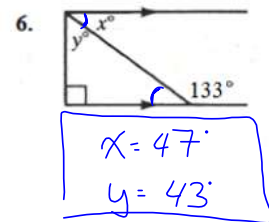
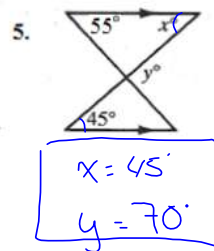
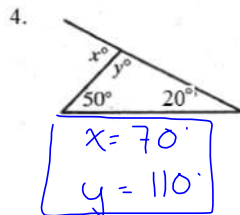
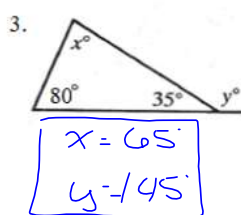


$$6x + 12 + 2x = 180$$

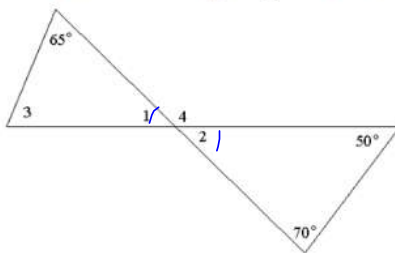
$$8x + 12 = 180$$

$$8x = 168$$

$$x = 21$$

TRIANGLE SUM & EXTERIOR ANGLESFind the value of x .Find the values of x and y .

7. Find the missing angle measures.

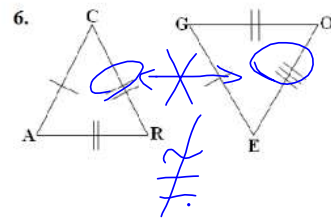
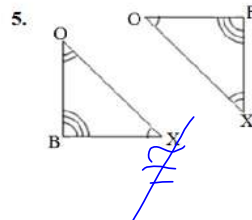
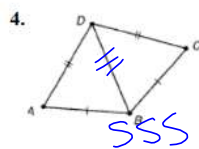
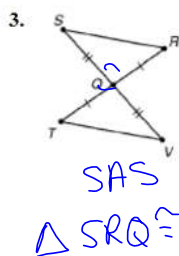


$$\begin{aligned} m\angle 2 &= 60^\circ \\ m\angle 1 &= 60^\circ \\ m\angle 4 &= 120^\circ \\ m\angle 3 &= 55^\circ \end{aligned}$$

PROVING TRIANGLES CONGRUENT

- What are the 4 ways we can prove triangles congruent? SSS, SAS, ASA, AAS
- What are the 2 ways that do not exist? AAA, SSA

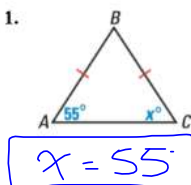
For each pair of triangles, tell which postulates, **if any**, make the triangles congruent. Write the triangles congruency statement.



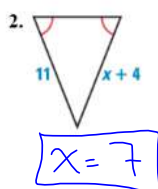
$$\triangle ABD \cong \triangle DCB$$

ISOSCELES TRIANGLESFind the value of x .

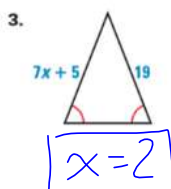
1.



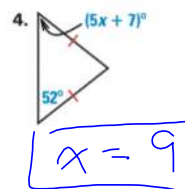
2.



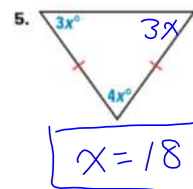
3.



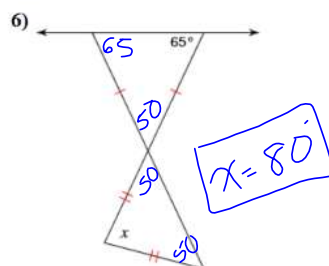
4.



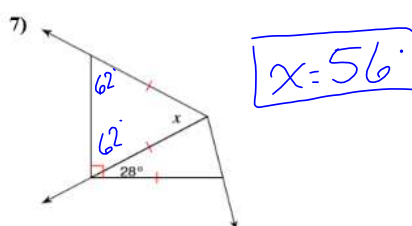
5.



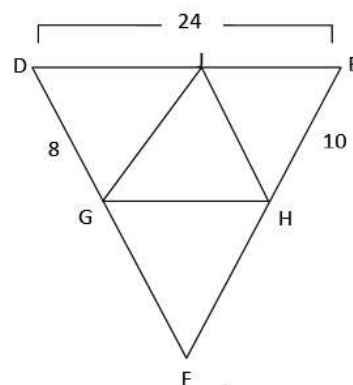
6)



7)

**TRIANGLE MIDPOINT THEOREMS****Directions:** Use the diagrams shown and the given information answer the following questions.

- 1) $EF = 20$
- 2) $GH = 12$
- 3) $DF = 16$
- 4) $JH = 8$
- 5) Find the perimeter of $\triangle GHJ$ 30



- 6) If $AC = 20$, then $LN = 10$
- 7) If $MN = 7$, then $AB = 14$
- 8) If $NC = 9$, then $LM = 9$
- 9) If $LM = 3x + 7$, and $BC = 7x + 6$, then $LM = 31$

$$2(3x + 7) = 7x + 6 \quad 3(8) + 7 = 31$$

$$6x + 14 = 7x + 6$$

$$x = 8$$

