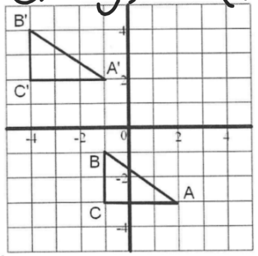
1. Describe what this translation represents in words: $(x,y) \to (x-2, y+3)$

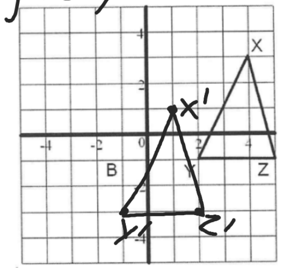
2 units left, 3 units up

2. Write a rule for the translation shown below.

$(x,y) \to (x-3, y+5)$



3. Draw and label the image of $\triangle XYZ$ after the following translation: $(x,y) \to (x-3, y-2)$



4. Find the coordinates of $\triangle EFG$ after the following translation:
$E(1,2)$ $F(5,3)$ $G(2,4)$ $(x,y) \to (x+12, y-27)$

E'(13,-25)
F'(17,-24)
G'(14,-23)

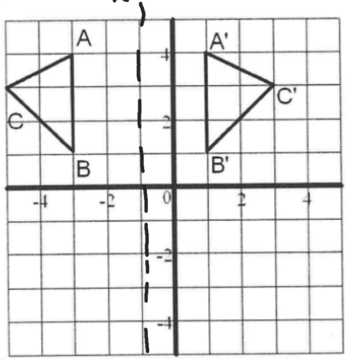
5. Given the coordinates of P and P' below to write a rule for the translation.
$P(-4,9)$ $P'(2,5)$

$(x,y) \to (x+6, y-4)$

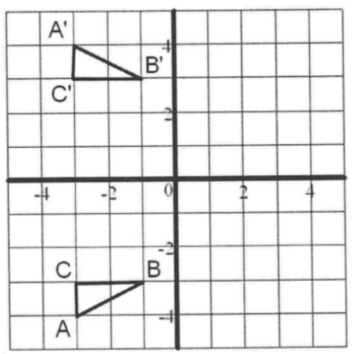
6. Draw the line of reflection and write its equation for the reflections shown below.

a)

x=-1



b)



y=0

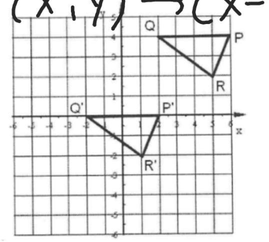
7. Find the coordinates of ΔTUV after the following translation:

$T(3,-2)$ $U(4,6)$ $V(-1,3)$ $(x,y) \to (x-8, y+14)$

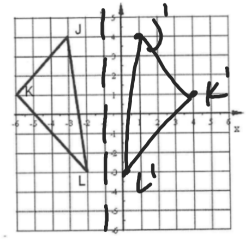
T'(-5,12)
U'(-4,20)
V'(-9,17)

8. Write the rule for the translation below:

$(X, Y) \rightarrow (X-4, y-4)$



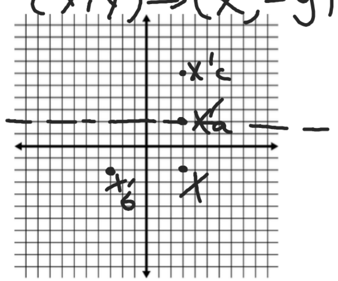
9. Draw the image ΔJKL after reflecting over the line $x = -1$



10. For each of the parts below, find the coordinates of the image of point X (3, -2) after each reflection.

a) Reflect X over the x-axis. b) Reflect X over the y-axis. c) Reflect X over the line y = 2

$(X, Y) \rightarrow (X, -Y)$ $(X, Y) \rightarrow (-X, Y)$



H. Geometry Section 4.4 – Using Congruent Triangles: CPCTC

Objective: I will be able to use triangle congruence and CPCTC to prove that two triangles are congruent.

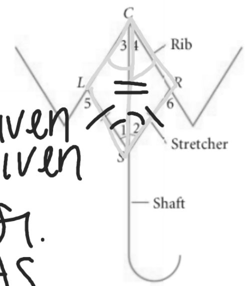
With SSS, SAS, ASA, HL and AAS you know how to use three parts of triangles to show that the triangles are $\cong$__________________. Once you have triangles congruent, you can make conclusions about their other parts because, by definition, (corresponding parts of congruent triangles are congruent.) You can abbreviate this as CPCTC

Example 1: Umbrella Frames: In an umbrella frame, the stretchers are congruent, and they open to angles of equal measure.

Given: $SL \cong SR$ and $\angle 1 \cong \angle 2$

Prove that the angles formed by the shaft and the ribs are congruent.

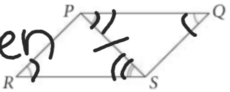
Prove $\angle 3 \cong \angle 4$



1. $SL \cong SR$	1. Given
2. $\angle 1 \cong \angle 2$	2. Given
3. $SC \cong SC$	3. Refl.
4. $\Delta LCS \cong \Delta RCS$	4. SAS
5. $\angle 3 \cong \angle 4$	5. CPCTC

QC 1: Given $\angle Q \cong \angle R, \angle QPS \cong \angle RSP$

Prove $SQ \cong PR$



1. $\angle Q \cong \angle R$ — 1. Given
2. $\angle QPS \cong \angle RSP$ — 2. Given
3. $PS \cong PS$ — 3. Refl.
4. $\triangle RPS \cong \triangle QSP$ — 4. AAS
5. $SQ \cong PR$ — 5. CPCTC

Example 2: Given $\angle DEG$ ~~≅~~ & $\angle DEF$ are right angles; $\angle EDG \cong \angle EDF$.

Prove $EF \cong EG$

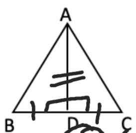
1. $\angle DEG$ & $\angle DEF = 90$ — 1. Given
2. $\angle EDG \cong \angle EDF$ — 2. Given
3. $ED \cong ED$ — 3. Refl
4. $\angle DEG \cong \angle DEF$ — 4. All rt $\angle$s =
5. $\triangle DEF \cong \triangle DEG$ — 5. ASA
6. $EF \cong EG$ — 6. CPCTC

1.

Given: $\overline{AD} \perp \overline{BC}$

$\overline{BD} \cong \overline{CD}$

Prove: $\overline{AB} \cong \overline{AC}$



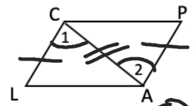
1. $AD \perp BC$ — 1. Given
2. $\angle BDA$ & $\angle CDA = 90$ — 2. Def of $\perp$
3. $\angle BDA \cong \angle CDA$ — 3. All rt $\angle$s are $\cong$
4. $BD = DC$ — 4. Given
5. $DA \cong DA$ — 5. Refl.
6. $\triangle BDA \cong \triangle CDA$ — 6. SAS
7. $AB \cong AC$ — 7. CPCTC

2.

Given: $\overline{CL} \cong \overline{PA}$

$\angle 1 \cong \angle 2$

Prove: $\overline{LA} \cong \overline{CP}$



1. $CL \cong PA$ — 1. Given
2. $\angle 1 \cong \angle 2$ — 2. Given
3. $CA = CA$ — 3. Refl.
4. $\triangle CAL \cong \triangle ACP$ — 4. SAS
5. $LA \cong CP$ — 5. CPCTC