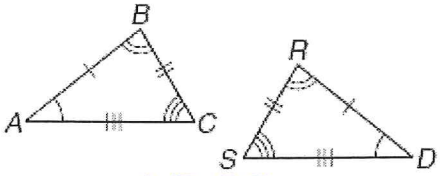
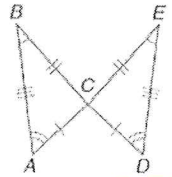
Name: Key i Date: _____ HR: _____

Congruent Triangles: HW

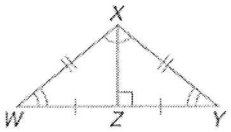
1) Identify the congruent triangles in the given figure



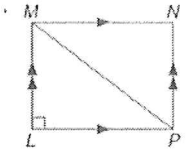
$\Delta ABC \cong$ ΔDRS



$\Delta ABC \cong$ ΔDEC



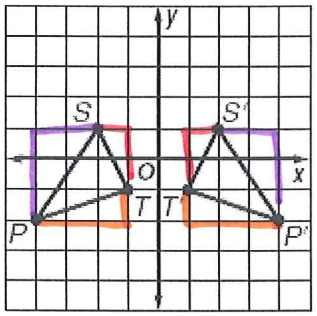
$\Delta XYZ \cong$ ΔXWZ



$\Delta MLP \cong$ ΔPNM

2) Verify that the following transformation preserves congruence.

a. $\triangle PST \cong \triangle P'S'T'$



$ST^2 = 1^2+2^2$
$ST^2 = 1+4$
$ST = \sqrt{5}$

$SP^2 = 2^2+3^2$
$SP^2 = 4+9$
$SP = \sqrt{13}$

$PT^2 = 1^2+3^2$
$PT^2 = 1+9$
$PT = \sqrt{10}$

$S'T' = 1^2+2^2$
$S'T' = \sqrt{5}$

$S'P' = 2^2+3^2$
$S'P' = \sqrt{13}$

$P'T' = 1^2+3^2$
$PT = \sqrt{10}$

SSS

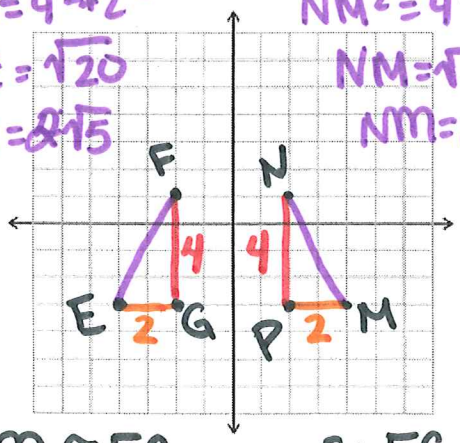
Determine whether $\triangle EFG \cong \triangle MNP$ given the coordinates of the vertices. Explain.

b. $E(-4, -3), F(-2, 1), G(-2, -3), M(4, -3), N(2, 1), P(2, -3)$

$FE^2 = 4^2+2^2$
$FE = \sqrt{20}$
$FE = 2\sqrt{5}$

$NM^2 = 4^2+2^2$
$NM = \sqrt{20}$
$NM = 2\sqrt{5}$

$\angle G \cong \angle P = 90°$

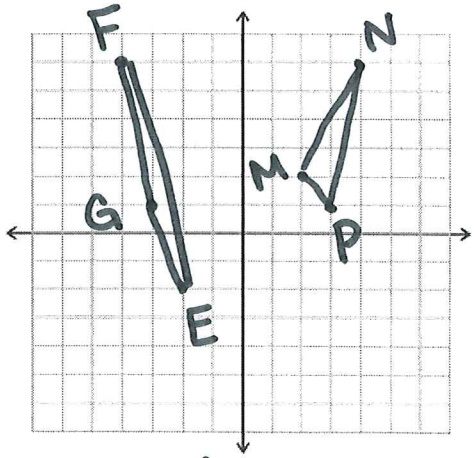


S: PM ≅ EG
S: FG ≅ PN
S: FE ≅ NM

or

S: EG ≅ PM
A: ∠G ≅ ∠P
S: FG ≅ PN

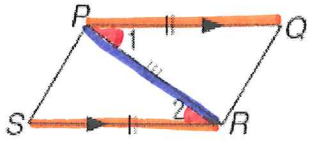
c. $E(-2, -2), F(-4, 6), G(-3, 1), M(2, 2), N(4, 6), P(3, 1)$



No!

Use the given information to identify the congruent triangles. Describe what congruence shortcut you used and what angles or sides you know are congruent.

3.



$\triangle SRP \cong \triangle QPR$

a. Short cut congruence used SAS

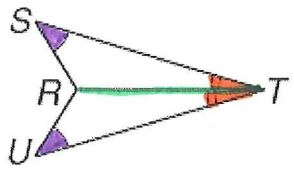
b. Name the 3 congruent corresponding parts:

S : $PQ \cong SR$ given

A : $\angle 1 \cong \angle 2$ alt. int. $\angle$s are $\cong$

S : $PR \cong PR$ reflexive

4.



$\triangle STR \cong \triangle UTR$

a. Short cut congruence used AAS

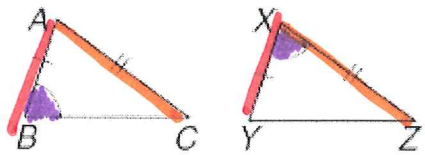
b. Name the 3 congruent corresponding parts:

A : $\angle S \cong \angle U$ given

A : $\angle UTR \cong \angle STR$ given

S : $RT \cong RT$ reflexive

5.



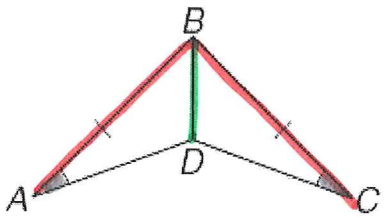
$\triangle ABD \cong$ none

a. Short cut congruence used _____

b. Name the 3 congruent corresponding parts:

NOT $\cong$

6.



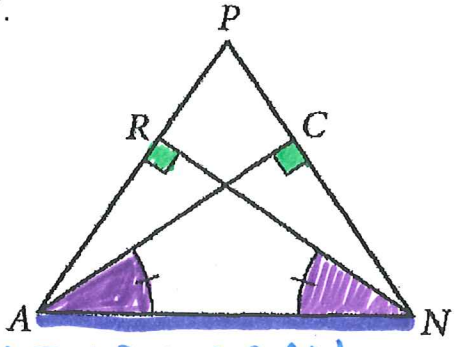
$\triangle ABD \cong$ none

a. Short cut congruence used _____

b. Name the 3 congruent corresponding parts:

No swearing in math!!!

7.



$\triangle RNA \cong \triangle CAN$

a. Short cut congruence used AAS

b. Name the 3 congruent corresponding parts:

A : $\angle ARN \cong \angle ACN$ given

A : $\angle CAN \cong \angle RNA$ give

S : $AN \cong AN$ reflexive