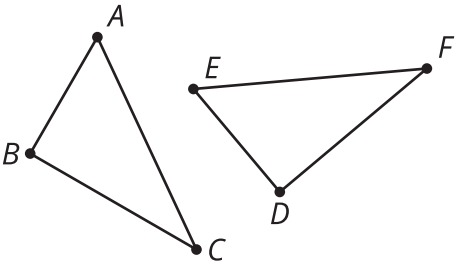
Lesson 3 Practice Problems

1. Triangle ABC is congruent to triangle EDF. So, Kiran knows that there is a sequence of rigid motions that takes ABC to EDF.



Select **all** true statements after the transformations:

A. Angle A coincides with angle F.

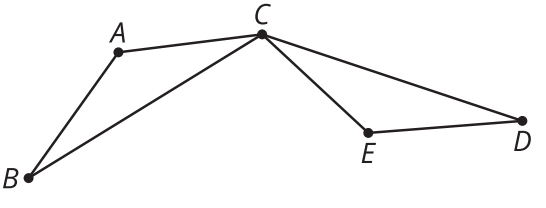
B. Angle B coincides with angle D.

C. Segment AC coincides with segment EF.

D. Segment BC coincides with segment ED.

E. Segment AB coincides with segment ED.

2. A rotation by angle ACE using point C as the center takes triangle CBA onto triangle CDE.

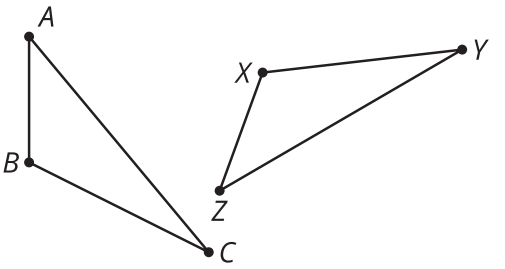


a. Explain why the image of ray CA lines up with ray CE.

b. Explain why the image of A coincides with E.

c. Is triangle CBA congruent to triangle CDE? Explain your reasoning.

3. The triangles are congruent. Which sequence of rigid motions will take triangle XYZ onto triangle BCA?



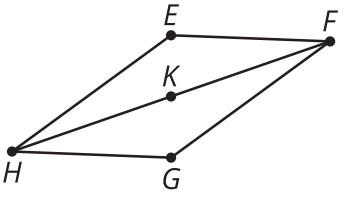
A. Translate XYZ using directed line segment YC. Rotate $X'Y'Z'$ using C as the center so that X' coincides with B. Reflect $X''Y''Z''$ across line CB.

B. Translate XYZ using directed line segment YC. Rotate $X'Y'Z'$ using C as the center so that X' coincides with B. Reflect $X''Y''Z''$ across line AC.

C. Translate XYZ using directed line segment YC. Rotate $X'Y'Z'$ using C as the center so that X' coincides with A. Reflect $X''Y''Z''$ across line CB.

D. Translate XYZ using directed line segment YC. Rotate $X'Y'Z'$ using C as the center so that X' coincides with A. Reflect $X''Y''Z''$ across line AC.

4. Triangle HEF is the image of triangle FGH after a 180 degree rotation around point K. Select **all** statements that must be true.



A. Triangle HGF is congruent to triangle FEH.

B. Triangle GFH is congruent to triangle EFH.

C. Angle KHE is congruent to angle KHG.

D. Angle GHK is congruent to angle EFK.

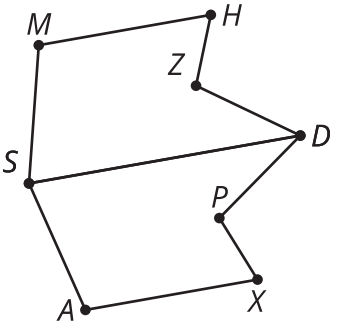
E. Segment EH is congruent to segment GH.

F. Segment HG is congruent to segment FE.

G. Segment FH is congruent to segment HF.

(From Unit 2, Lesson 2.)

5. Line SD is a line of symmetry for figure $ASMHZDPX$. Tyler says that $ASDPX$ is congruent to $SMDZH$ because sides AS and MS are corresponding.

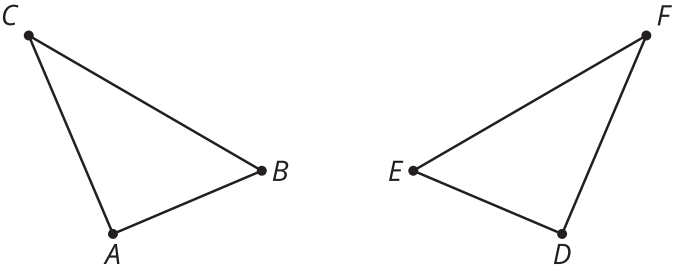


a. Why is Tyler's congruence statement incorrect?

b. Write a correct congruence statement for the pentagons.

(From Unit 2, Lesson 2.)

6. Triangle ABC is congruent to triangle DEF. Select **all** the statements that are a result of corresponding parts of congruent triangles being congruent.



A. Segment AC is congruent to segment EF.

B. Segment BC is congruent to segment EF.

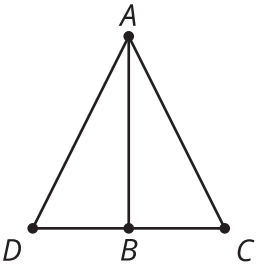
C. Angle BAC is congruent to angle EDF.

D. Angle BCA is congruent to angle EDF.

E. Angle CBA is congruent to angle FED.

(From Unit 2, Lesson 1.)

7. When triangle ABC is reflected across line AB, the image is triangle ABD. Why is angle ACD congruent to angle ADB?



A. Corresponding parts of congruent figures are congruent.

B. Congruent parts of congruent figures are corresponding.

C. Segment AB is a perpendicular bisector of segment DC.

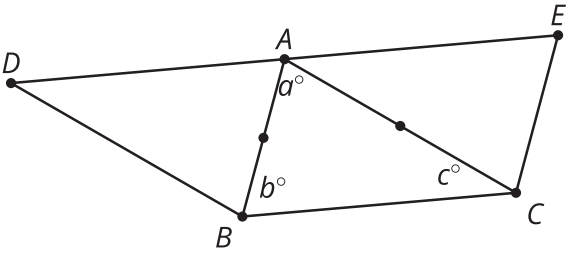
D. An isosceles triangle has a pair of congruent angles.

(From Unit 2, Lesson 1.)

8. Line DE is parallel to line BC.

a. What is the measure of angle EAC?

b. What is the measure of angle DAB?



(From Unit 1, Lesson 21.)