

Use the definition of congruence in terms of rigid motion to determine whether the two figures are congruent, explain your answers.

1. Map PQRSU to JKLMNO

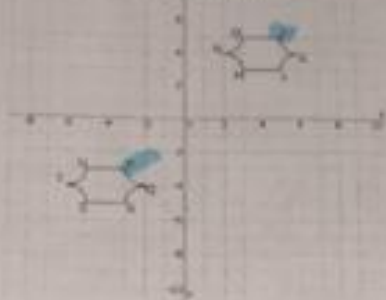


Figure PQRSU can be mapped onto Figure JKLMNO by a translation Right 8 and up 8. Since translations are rigid motions, and rigid motions create congruent figures then Figure PQRSU is Congruent to JKLMNO.

2. Map KLMNO to ABCDE

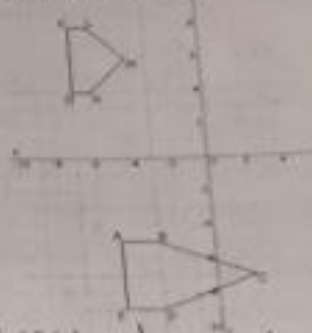


Figure KLMNO does not map onto ABCDE by any transformation. Thus no rigid motion is present so the figures are not congruent.

3. Map DEFG to JKHI

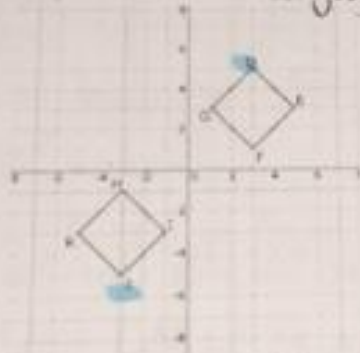


Figure DEFG can be mapped onto JKHI by a Rotation 180° . Since a rotation is a rigid motion and rigid motions create congruent figures then figure DEFG is Congruent to figure JKHI.

4. Map JKLM to QPON

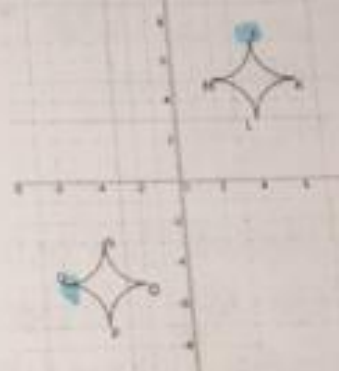


Figure JKLM can be mapped to figure QPON by a reflection over $y = -x$. Since a reflection is a rigid motion and rigid motions create congruent figures then figure JKLM is Congruent to QPON.

5. Map ABCD to A'B'C'D'

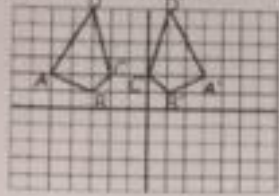


Figure ABCD can be mapped to figure A'B'C'D' by a reflection over y-axis followed by a translation left 2. Since a translation and a reflection are rigid motions and rigid motions create congruent figures it follows that figure ABCD is congruent to A'B'C'D'.

Map HIJKLMN to GFEDBA

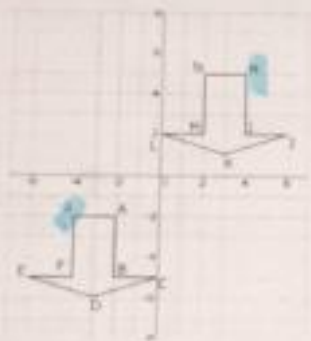


Figure HIJKLMN can be mapped into GFEDBA by a reflection over the y-axis followed by a translation down 7. Since reflections & translations are rigid motions and rigid motions create congruent figures it follows that figure HIJKLMN is congruent to GFEDBA.

6. Map ABCD to A'B'C'D'

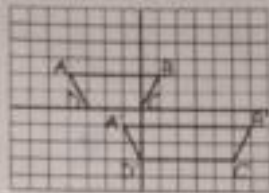


Figure ABCD does not map onto A'B'C'D' by any transformation. Thus there is no rigid motion present so the figures are not congruent.

8. Map NOPQ to KLMJ

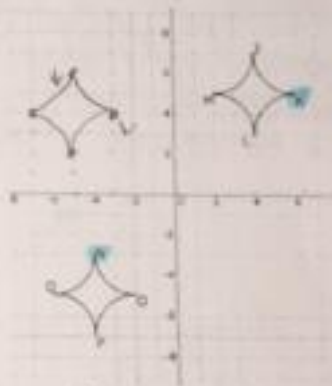


Figure NOPQ can be mapped to figure KLMJ by a rotation 90 degrees followed by a translation down 9 and right 1. Since a rotation and a translation are rigid motions and rigid motions create congruent figures, then figure NOPQ and KLMJ are congruent.