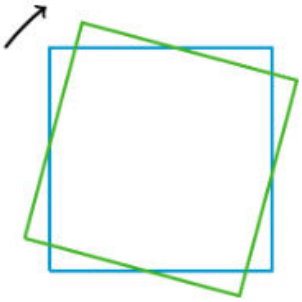
Unit 1 Glossary Terms

clockwise

An object is rotating clockwise if it is turning in the same way that the hour or minute hand goes around a clock.

The tilted square is rotated 15° clockwise from the square sitting horizontally on its base.



corresponding

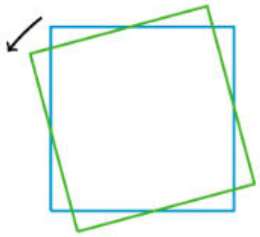
If a part of the original figure matches up with a part of the copy, we call them corresponding parts. The part could be an angle, point, or side, and you can have corresponding angles, corresponding points, or corresponding sides.

If you have a distance between two points in the original figure, then the distance between the corresponding points in the copy is called the corresponding distance.

counterclockwise

An object is rotating counterclockwise if it is turning in the opposite way to the way that the hour or minute hand goes around a clock.

The tilted square is rotated 15° counterclockwise from the square with a horizontal base.

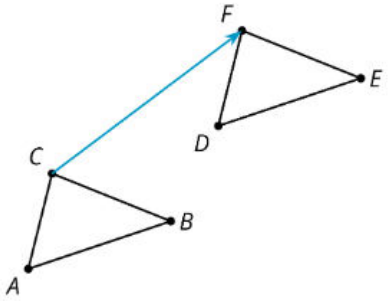


image

Translations, rotations, and reflections move objects in the plane. Points, segments, and other parts of the original all have corresponding parts on the "moved object." The moved object is called the image.

For example, here is triangle ABC and a translation to the right and up which is labeled DEF.

Point F in the image corresponds to point C, segment EF in the image corresponds to segment BD, and angle DEF corresponds to angle ABC.



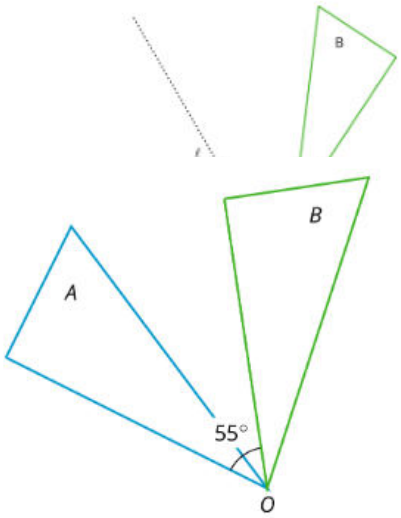
reflection

The reflection of a figure across a line takes every point of the figure to a point directly opposite to it on the other side of the line and the same distance from

the line. In the figure, the triangle B is the reflection of the triangle A across the line l.

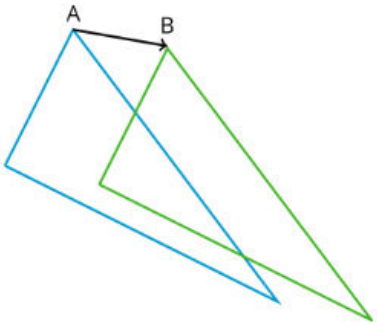
Rotation

A rotation has a center, an angle, and a direction. It moves every point of a figure in a circle around the center, in the direction specified (clockwise or counterclockwise), and for a distance specified by the angle. For example, in the figure, triangle A is rotated $55°$ clockwise about center O to get triangle B.



Translation

A translation has a distance and a direction. It moves every point in a figure the given distance in the given direction.

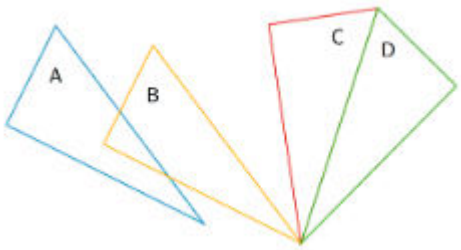


The figure on the left is translated to the figure on the right in the direction from A to B, using the distance from A to B.

Sequence of transformations

A sequence of transformations is a set of translations, rotations, reflections, and dilations performed in a particular order on a geometric figure, resulting in a final figure.

The diagram shows a sequence of transformations consisting of a translation (from A to B) followed by a rotation (from B to C) followed by a reflection (from C to D). The last triangle is the final figure resulting from the sequence.

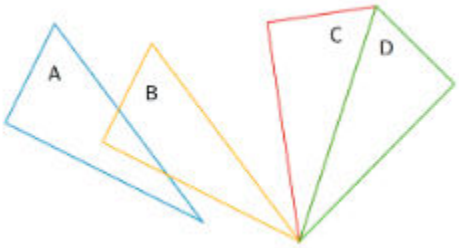


Transformation

A transformation is a translation, rotation, reflection, or dilation, or combination of these. There is also a more general concept of a transformation of the plane that is not discussed in grade 8.

Rigid transformation

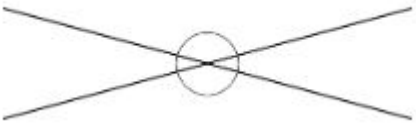
A rigid transformation is a sequence of translations, rotations, and reflections. If a rigid transformation is applied to a geometric figure, the resulting figure is called the image of the original figure under the transformation.



The diagram shows a rigid transformation consisting of a translation (from A to B) followed by a rotation (from B to C) followed by a reflection (from C to D). The last triangle is the image of the first triangle under this rigid transformation.

Vertical angles

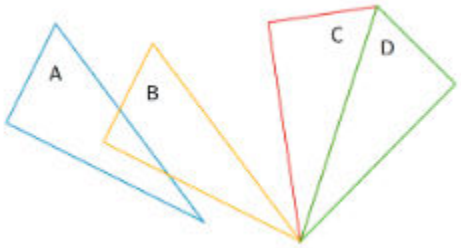
A pair of vertical angles is a pair of angles that are across from each other at the point where two lines intersect. There are two pairs of vertical angles.



Congruent

One figure is congruent to another if there is a rigid transformation (a sequence of translations, rotations, and reflections) that moves the first figure so that it fits exactly over the second. The second figure is called the image of the rigid transformation.

Triangle A is congruent to triangle D. A translation takes triangle A to triangle B, a rotation takes triangle B to triangle C, and a reflection takes triangle C to triangle D.

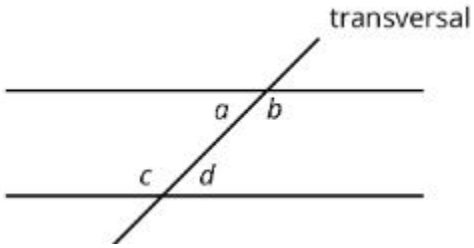


Alternate interior angles

Interior angles are angles that are made by a transversal crossing two parallel lines. They are the angles that lie between the parallel lines, not outside them.

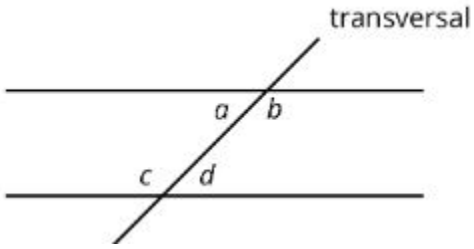
If two interior angles lie on opposite sides of the transversal they are called alternate interior angles.

In the figure,a and d are alternate interior angles, and b and c are also alternate interior angles.



Transversal

A transversal to two parallel lines is a line that cuts across them, intersecting each one.



Straight angle

If the two rays that make an angle form a straight line, we call the angle a straight angle.