Solution for section 16.1, B20: The transformations are depicted in the following figure.

Solution for section 16.1, B25:
Solution for section 16.1, Problems for writing/discussion # 3: Owen’s conjecture is only true under the following circumstances:

1. The figure being rotated has a line of symmetry.
2. The point of rotation must be on the line of symmetry.
3. The line of reflection passes through the point of rotation and is perpendicular to the line of symmetry.

Here’s an example:

![Diagram of a triangle with a point of rotation and lines of reflection and symmetry.]

Solution for section 16.2, B9:

(a) Is a reflection since the figures are symmetric about the vertical line equidistant from each figure.

(b) You could use a glide reflection by sufficiently translating the top figure to the left and then reflect about the line equidistant from both figures. There are other possible glide reflections as well. You could also use a rotation, reflection, and a translation but this wouldn’t be as simple as a glide reflection.

(c) A rotation would work in this case.

Solution for section 16.2, B10:

(a) A rotation would work for this case.

(b) A glide reflection would work here. First you would translate the initial triangle so that the corresponding vertices would line up on horizontal lines and then you would reflect about a vertical line exactly between the triangles.

Solution for section 16.2, B20:

$p \parallel q$ implies that $\angle 1 \cong \angle 2$ because corresponding angles are congruent for parallel lines. Since an isometry preserves angle measure we have that $\angle 1 \cong \angle 3$ and $\angle 2 \cong \angle 4$. This means that $\angle 3 \cong \angle 4$, $\angle 1 \cong \angle 2$, and therefore $p' \parallel q'$.

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