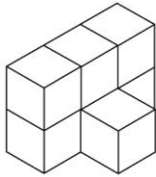# Grade 8 Math: Final Exam Review
Unit 8: Geometry
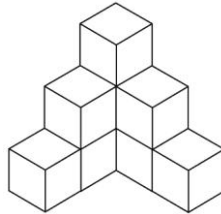
Lesson 8.1: Sketching Views of Objects

1. Sketch the top, front, and side views of each object.
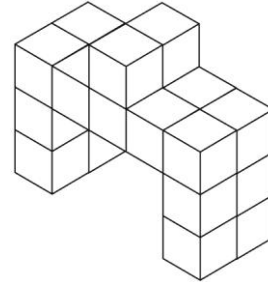   a)   b)   c)
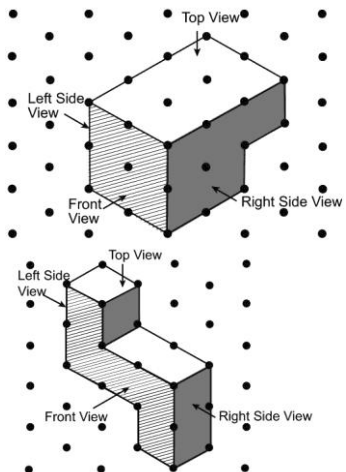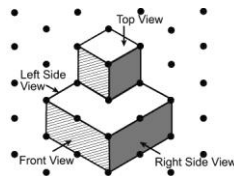
2. Sketch the top, front, and side views of each object drawn on isometric dot paper.
   a)   b)   c)

3. Use linking cubes.
   Make the letter E.
   Sketch the front, top, and side views of your model.

4. Sketch the top, front, and side views of each object at home or in the classroom.
   a) a tissue box
   b) a CD case
   c) a cereal box
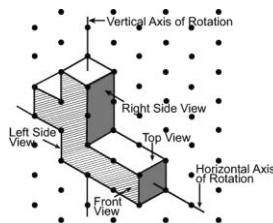
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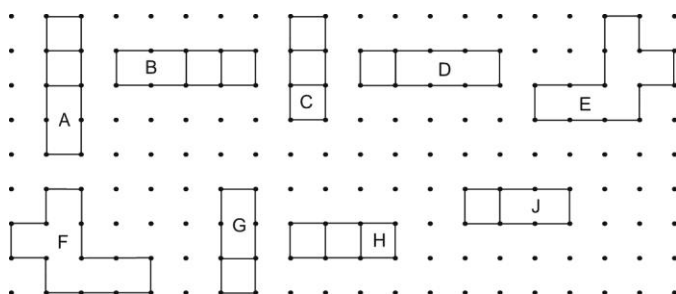
Lesson 8.2: Drawing Views of Rotated Objects

1.   Build this object.
Rotate the object as describe below,
then match each view to the front, top,
and side views of the rotated object.
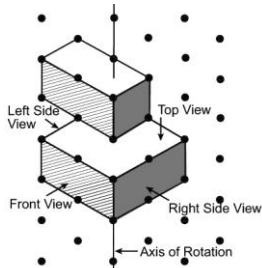A lettered view can be used more than once.

a)   a horizontal rotation of 90° clockwise about
the vertical axis shown

    b) a horizontal rotation of 180° clockwise about the vertical axis shown

    c) a vertical rotation of 90° away from you about the horizontal axis shown

2. Suppose the object in question 1 was rotated horizontally 180° counterclockwise about the vertical axis shown. How would the views of the object after the rotation compare to those in question 1b? Justify your answer.

3. Here is an isometric drawing of an object.

    The object is rotated horizontally 270° clockwise about the axis shown.
    a) Draw the front, top, and side views of the object after the rotation.
    b) Describe a different rotation that will have the same views as the ones you drew in part a.

4. Use the object in question 3.
   Suppose the object is rotated 270° counterclockwise.
   Will the new views of the object be the same as those drawn in question 3a?
   If your answer is yes, explain how you know.
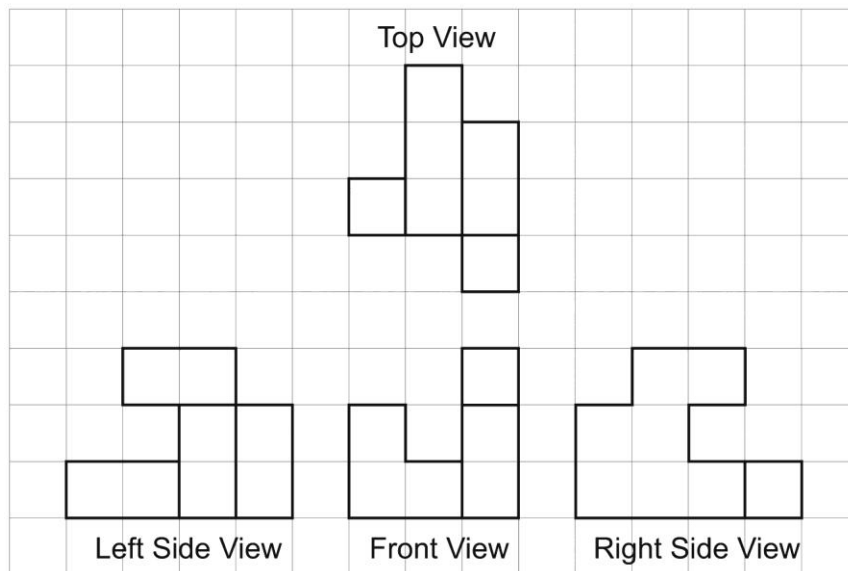   If your answer is no, draw the new views.
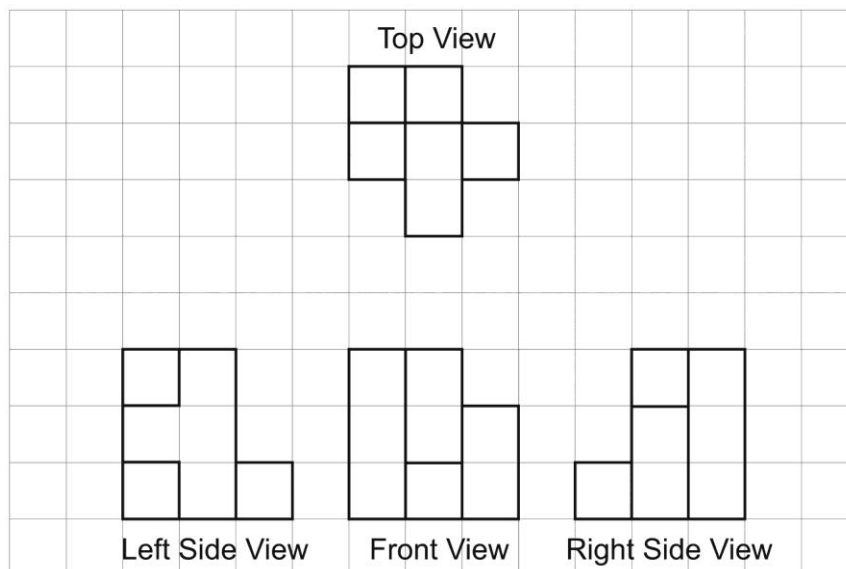
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Lesson 8.3: Building Objects from Their Views

1. Use linking cubes to build an object for each set of views below.

   a)

   Top View

   Left Side View   Front View   Right Side View

   b)

   Top View

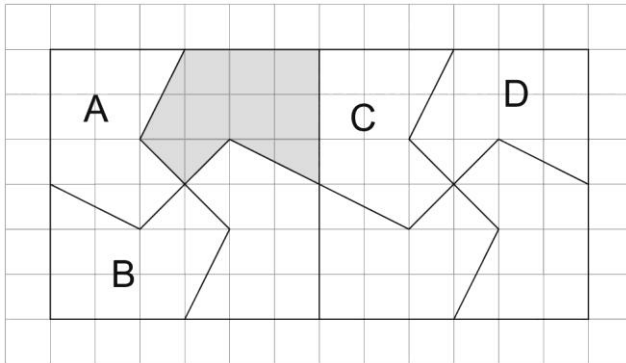   Left Side View   Front View   Right Side View

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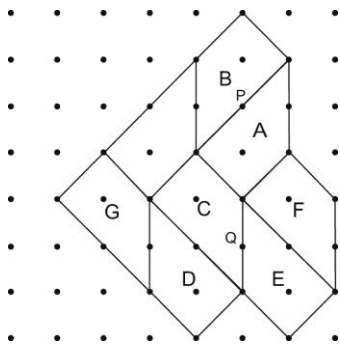
Lesson 8.4: Identifying Transformations

1. Start with the shaded shape.
Use transformations to describe how to create Shapes A, B, C, and D.

2. Use this design.
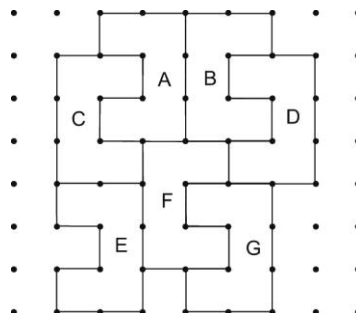Match each transformation to a transformation image.

    a) Rotate Shape A 180° about point P.
    b) Translate Shape C 2 units left.
    c) Rotate Shape D 180° about point Q.
    d) Translate Shape G 4 units right.

3. Use the design to the right.
Identify each transformation.
    a) Shape D is the image of Shape C.
    b) Shape E is the image of Shape G.
    c) Shape C is the image of Shape E.
    d) Shape F is the image of Shape C.
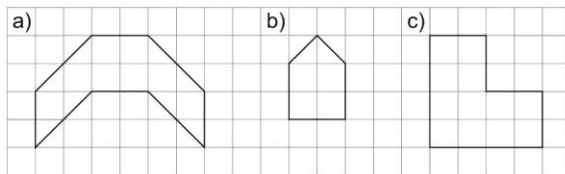   **e)** Shape A is the image of Shape B.

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Lesson 8.5: Constructing Tessellations

1. Use dot paper.
   Draw a non-symmetrical quadrilateral on dot paper.
   Show how it can be used to tessellate.

2. Copy each shape on grid paper.
   Show one way each shape can be used to tessellate.

3. **a)** Use dot paper.
   Draw a hexagon that will tessellate.
   Show part of the tessellation.
   Explain how it tessellates.

   b) Draw a hexagon that will *not* tessellate.
   Show how it does not tessellate.
   Explain why the hexagon does not tessellate.
   Which shapes will fill the gaps?

4. Use the hexagon you drew in question 3b.
   Find one or more polygons that you can combine with the hexagon
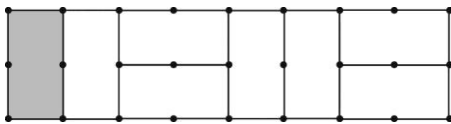   to create a composite shape that tessellates.
   Create the tessellation.
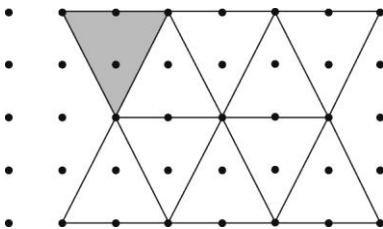
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Lesson 8.6: Identifying Transformations in Tessellations

1. Here are three patterns.
   Describe the transformations that can be used to create each pattern.
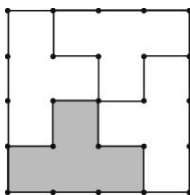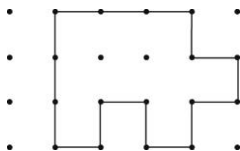   Start with the shaded shape.
   a)

   b)

   c)

2. Use this shape and transformations to create a tessellation on square dot paper.

   Describe the tessellation in terms of transformations and conservation of area.

3. Here is a tessellation of a composite shape.
   Describe the composite shape.
   Describe the tessellation in terms of transformations and
   conservation of area.
   Describe the tessellation in as many ways as you can.