

Print three copies of this page on blue cardstock. You should have a total of 12 triangles.  
Laminate them and cut them out.

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To make this work, print the first page 3x on blue cardstock. Laminate and cut out triangles. You should have 12 of them.

Print the other pages on white cardstock, laminate, and cut out cards. Cards can be made into a booklet by punching a hole in the corner of the cards and tying them together with a ribbon or using a booklet ring (found at office supply stores).

The triangles in this exercise have the angles:  $30^\circ$ ,  $60^\circ$ , and  $90^\circ$ .

Ask the children to join you, and then show the children the triangles. If they don't point it out, mention that they are all right-angle scalene triangles. Flip one triangle over and show how you can form an equilateral triangle with two of them back-to-back.

Point out the three different-sized angles. Note that the biggest angle is a right angle, and the other two are both acute angles.

Show them the command cards and give them help (if needed) in completing the commands. The command cards are numbered and should be completed in the correct order.

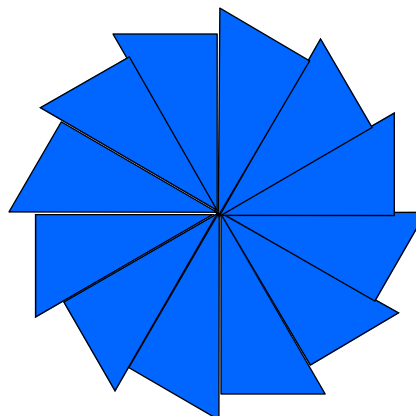
After completing the command cards, the kids might want to use the triangles and trace them on a large piece of paper to re-create the different designs.

Using a measuring angle or protractor, measure each angle of one of the triangles.

What degree is the largest angle? What is another name for this angle? What are the other two angles of the triangle?

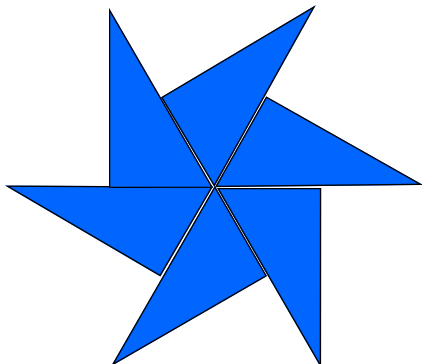
1

Construct a 12-pointed star by putting all of the smallest angles together:



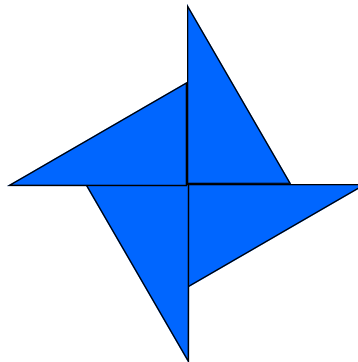
2

Construct a 6-pointed star by putting six of the medium angles together:



3

Construct a 4-pointed star by putting the 4 largest angles together:



4

When all of the angles meet in the middle, they equal  $360^\circ$ .

Write each equation:

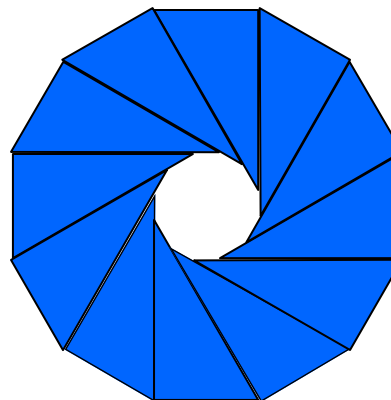
$$12 \text{ angles} \times 30^\circ = \underline{\hspace{2cm}}$$

$$6 \text{ angles} \times 60^\circ = \underline{\hspace{2cm}}$$

$$4 \text{ angles} \times 90^\circ = \underline{\hspace{2cm}}$$

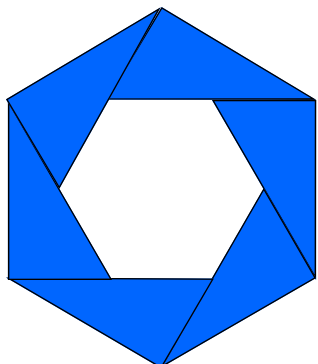
5

Construct the 12-pointed star. Pull the stars out to form a polygon in the center:



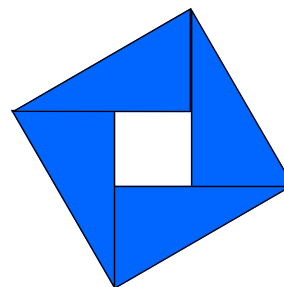
6

Construct the 6-pointed star. Pull apart the center points of the triangle to form a hexagon:



7

Construct the 4-pointed star. Pull apart the center points of the triangle to form a square:



8