

Quiz 1 KEY

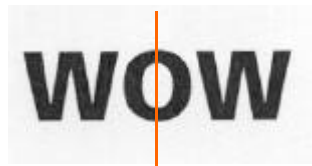
- (2) 1. If a triangle has at least one line of symmetry, it is always a(n) isosceles triangle, and sometimes a(n) equilateral triangle. *If it has exactly 1, it's isosceles but not equilateral. If it has more than 1, it is isosceles as well as equilateral. So it is **always** isosceles and **sometimes** equilateral.*

Having trouble with the logic? Maybe the following will help:

In our classroom, we have students who **CAN SEE**. Anyone with an additional pair of "eyes" wearing glasses (we'll say s/he has four eyes) is a student who **NEEDS HELP TO SEE**. Fill in the blanks with these descriptors in capital letters.

If a student in our classroom has at least one pair of eyes, s/he is always a student who _____, and sometimes a student who _____.

- (3) 2. a. Does the word below have any reflectional symmetry? If so, draw all the lines of symmetry.



Yes

- b. Change one letter in the word to form a word (in true English) with rotational symmetry.

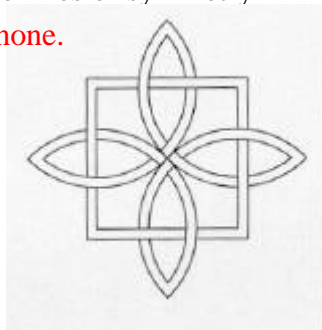
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- c. What is the angle of rotation of the word you formed in part b? 180°

- (2) 3. For the design below

- a. draw all the lines of symmetry

There are none.



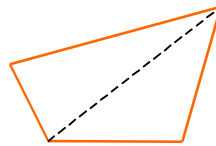
- b. if the design has any rotational symmetry report the angle of rotation: 90°

- (3) 4. a. Draw any irregular convex quadrilateral.

- b. Determine the measure of the sum of the interior angles. 360°

- c. Suppose in your future classroom a student forgets the formula to find the answer to 4b. Explain in a sentence or two how to find part b using triangles and the fact that the sum of the interior angles of a triangle is 180°. You can draw the triangles on your figure.

The interior angle sum of the quadrilateral equals the interior angle sum of the two triangles, which totals $2(180^\circ) = 360^\circ$



- (+2) EXTRA: You can answer 4c in more than one way. Explain it (use back) showing a different method than above.

Pick any point in the quadrilateral's interior. Draw 4 triangles as shown.

Add the interior angles of the four triangles $4(180^\circ) = 720^\circ$.



If we then subtract off the sum of the 4 central angles of the polygon (which totals 360°),

we will have the interior angle sum of the quadrilateral, $720^\circ - 360^\circ = 360^\circ$.