Warm Up

Grade 8

Dec 5, 2018

Assessment Review

NO CALCULATORS

1) Find the missing length

$c^2 = a^2 + b^2$

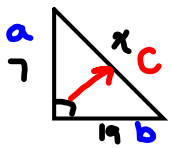
$c^2 = 7^2 + 19^2$

$c^2 = 49 + 361$

$c^2 = 410$

$c = \sqrt{410}$

$c \approx 20.2$



(-)•(-) => ⊕

(+)•(+)

2) Given the integers -2, +10, -7, +3, -8, which two would give the greatest product?

positive multiplication

(+10)x(+3) = +30

(-7) x (-8) = +56

3) find the value of y given 7 + 2y = 21

-7 -7

$\frac{2y}{2} = \frac{14}{2}$

$y = 7$

4) Estimate $\sqrt{39}$

$\sqrt{36}$ $\sqrt{49}$

6 7

≈6.3

3) Evaluate (-18)÷(+2) - (+4)x(+2)

BEDMAS

more than one operation

= (-9) − (+4)x(+2)

= (-9) − (+8)

add opp

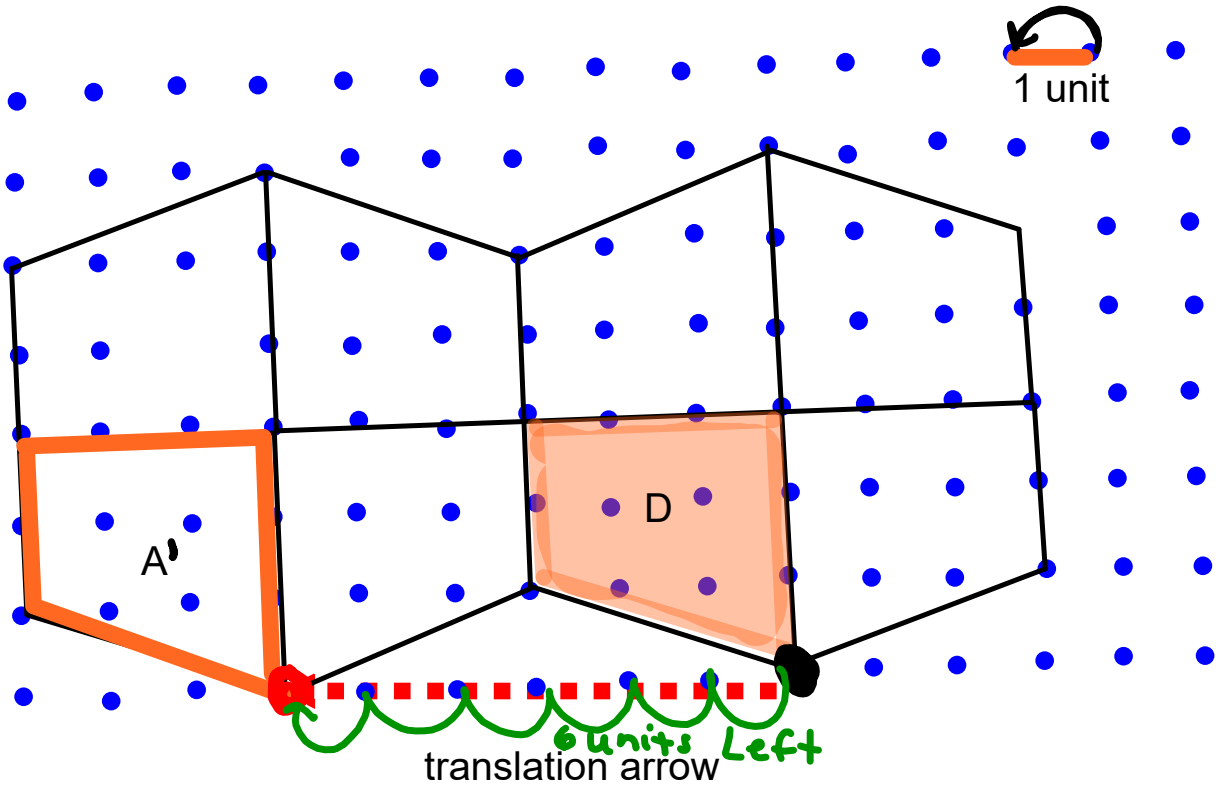
= (-9) + (-8)

= -17

Translation- is a slide of a shape in a straight line

- arrow is used to show the movement

- the translated image and the shaded shape are congruent and have the same orientation



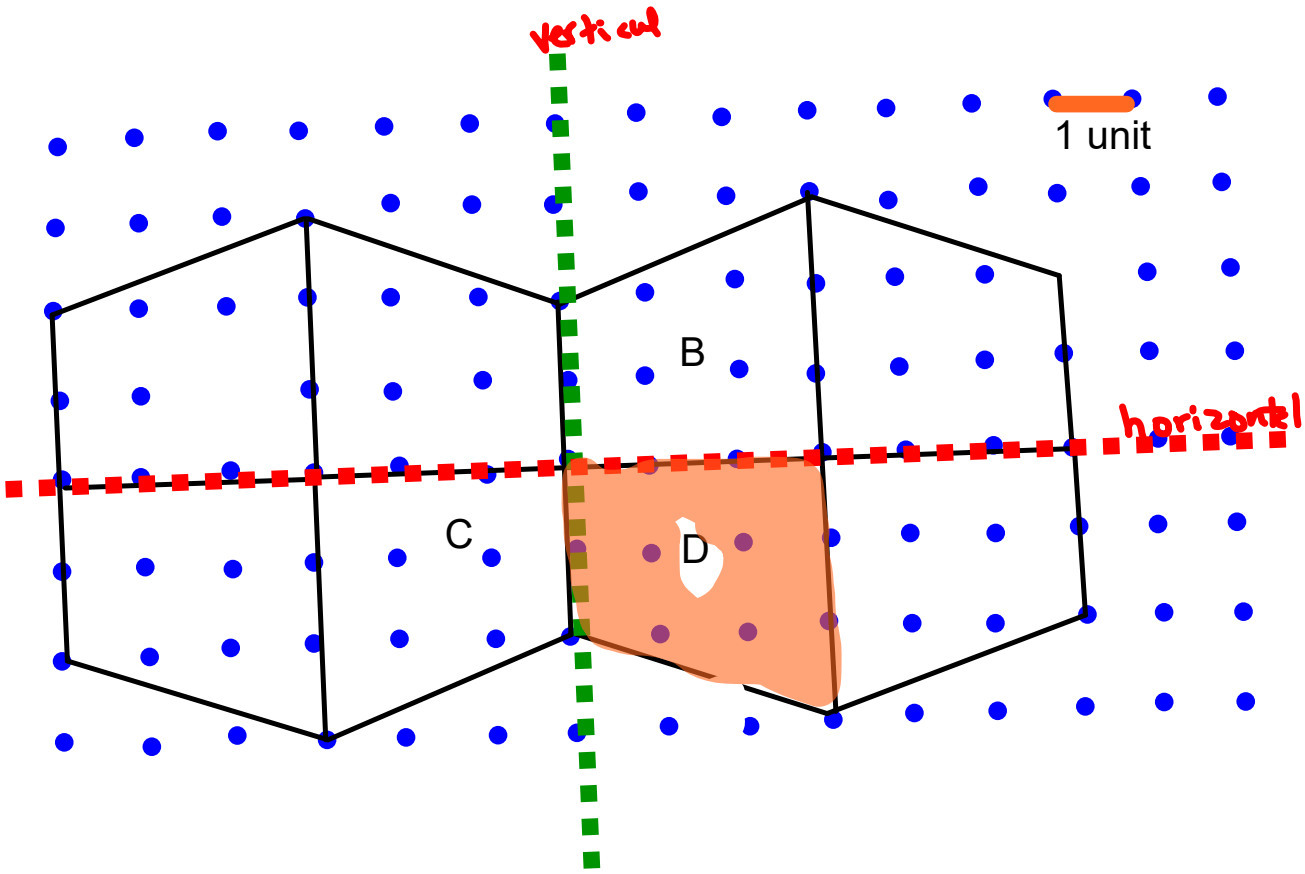
The shaded shape D is translated ___ units ____ to give translated image A'

Reflection- find horizontal line of reflection (marked with red)

*Shape D is reflected in the red line. It reflects image is Shape B

- Find vertical line of reflection (marked with green)

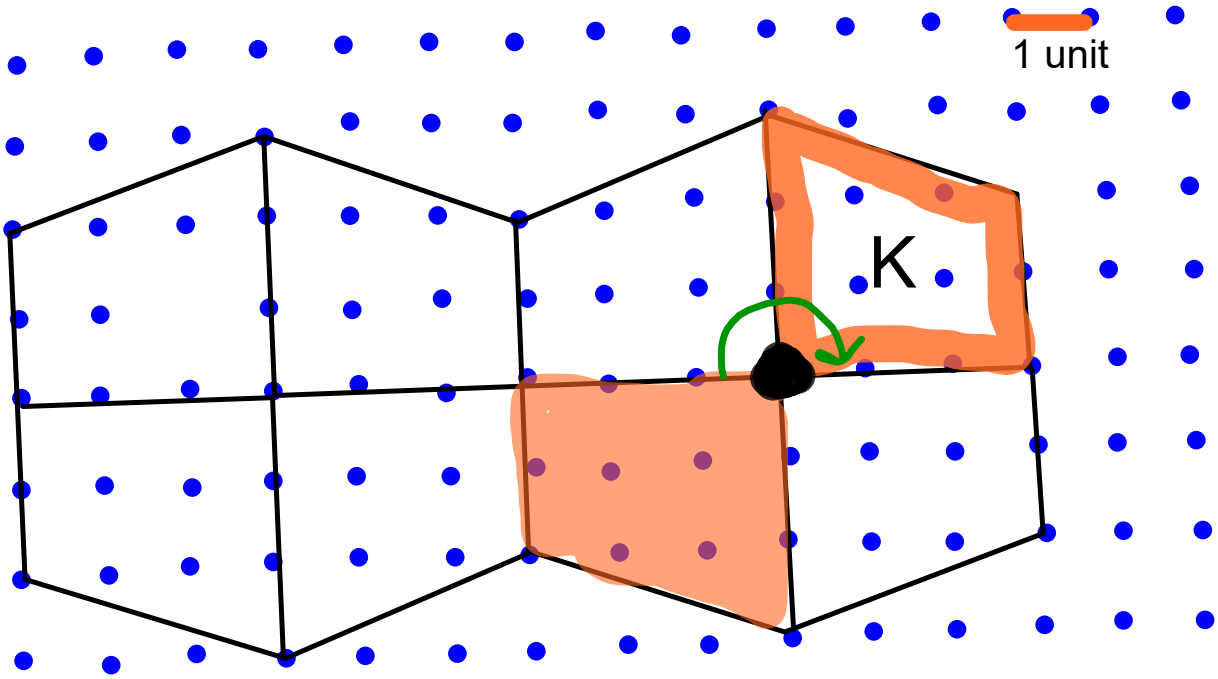
* The shape D is reflected in the green line of reflection. Its reflection image is Shape C



Rotation- need a point of rotation

- The shaded shape D is rotted 180° clockwise about the point of rotation(marked with a BIG dot). The rotation image is shape K

- rotation image of 180 are congruent



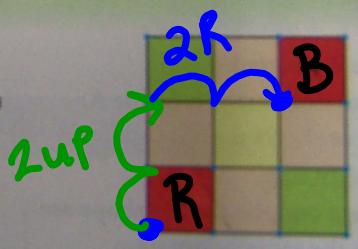
Under any transformation, the original shape and its image are always congruent.

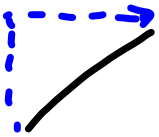
Example 1

Look at this design of squares.
Describe each transformation.

a) a translation for which Square R is an image of Square B

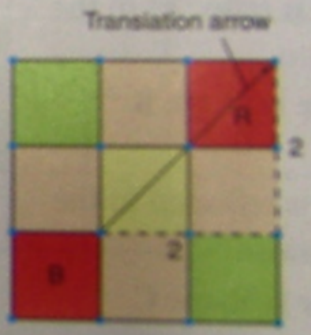
b) a reflection for which Square R is an image of Square B





A Solution

a) Square R is the image of Square B after a translation 2 units right and 2 units up. The translation arrow shows the movement.



Square R is the image of Square B after a reflection in the slanted line. Use a Mira to verify the image.

Look at this design of triangles.
Describe each rotation.

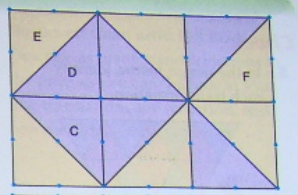
a) a rotation for which Triangle D is an image of Triangle C

b) a rotation for which Triangle F is an image of Triangle E

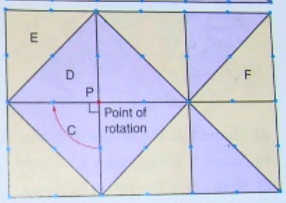
A Solution

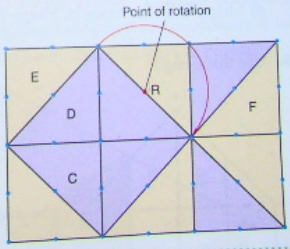
a) Triangle D is the image of Triangle C after a rotation of 90° clockwise about P. P is a vertex the two triangles share. The same image is also the result of a rotation of 270° counterclockwise about P.

b) Triangle F is the image of Triangle E after a rotation of 180° about R. The point of rotation, R, is *not* on the shape being rotated.



Solution





Solution

Study

Constructing Tessellations

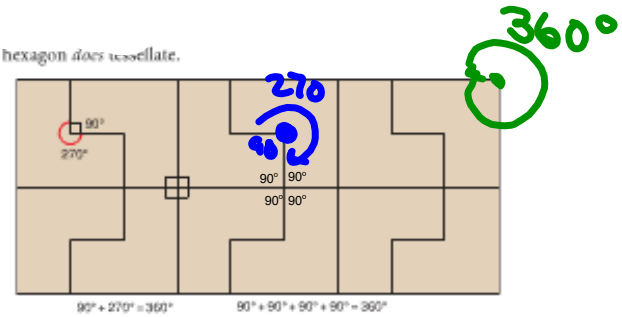
When congruent copies of a shape cover a plane with no overlaps or gaps, we say the shape tessellates.

The design created is called a tessellation.

For copies of a polygon to tessellate, the **sum of the angles at any given point where vertices meet must be 360.**

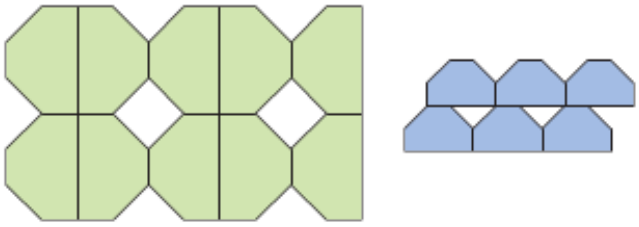
*Not all shapes tessellates

➤ This hexagon *does* tessellate.



➤ This hexagon *does not* tessellate.
Here are two different pictures to illustrate this.

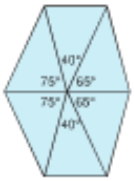
There are gaps among the hexagons.



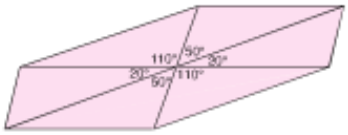
In *Investigate*, you found that triangles and quadrilaterals tessellate.

At any point where vertices meet, the sum of the angle measures is 360°.

Acute triangle



Obtuse triangle



Six congruent triangles surround a point.

At each point:

$75° + 40° + 65° + 65° + 40° + 75° - 360°$

At each point:

$20° + 50° + 110° + 20° + 50° + 110° - 360°$

Convex quadrilateral

Concave quadrilateral

Four congruent quadrilaterals surround a point.

At each point:

$80° + 85° + 130° + 65° - 360°$

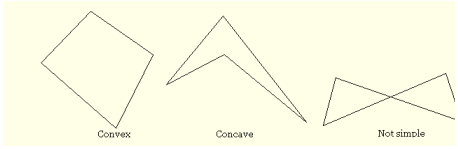
At each point:

$50° + 40° + 22° + 248° - 360°$

It is also possible for combinations of shapes to tessellate.

All triangles and quadrilaterals will tessellate.

A quadrilateral that is concave has an angle exceeding 180°. In either case, the quadrilateral is *simple*, which means that the four sides of the quadrilateral only meet at the vertices, two at a time. So that two non-adjacent sides do not cross. A quadrilateral that is not simple is also known as *self-intersecting* to indicate that a pair of his non-adjacent sides intersect.

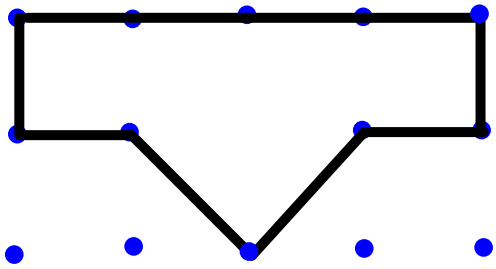


Discuss examples

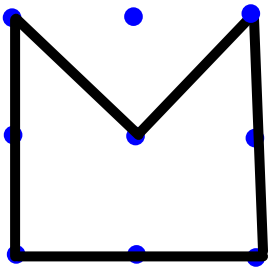
Does the shape tessellate? (You actually have to trace it out. My want to cut an image out and move around)

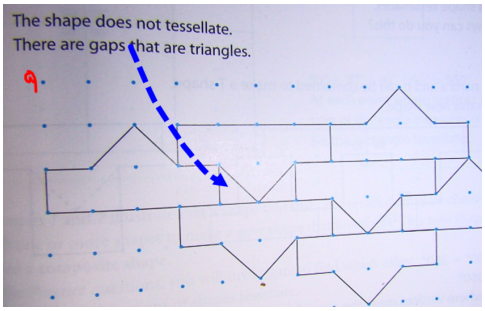
Do on Black board

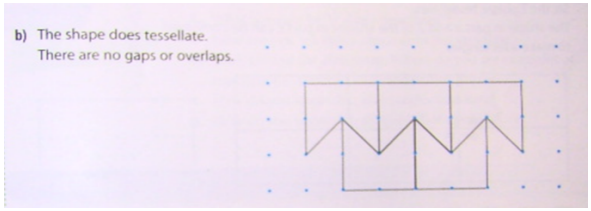
a)



b)




The shape does not tessellate.
There are gaps that are triangles.
9.


b) The shape does tessellate.
There are no gaps or overlaps.