The Cartesian Plane

Math Class

1st Hour

Date:

Ach. Ind.: To describe procedures for the construction of figures and objects given their measurements.

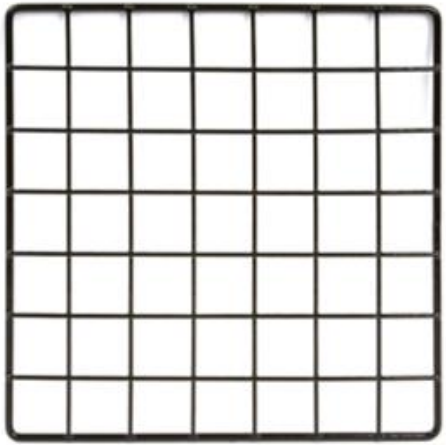
Warm Up

Math Fifth grade

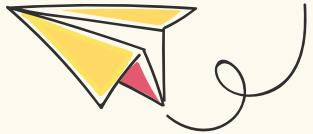
¡Mini Challenge!

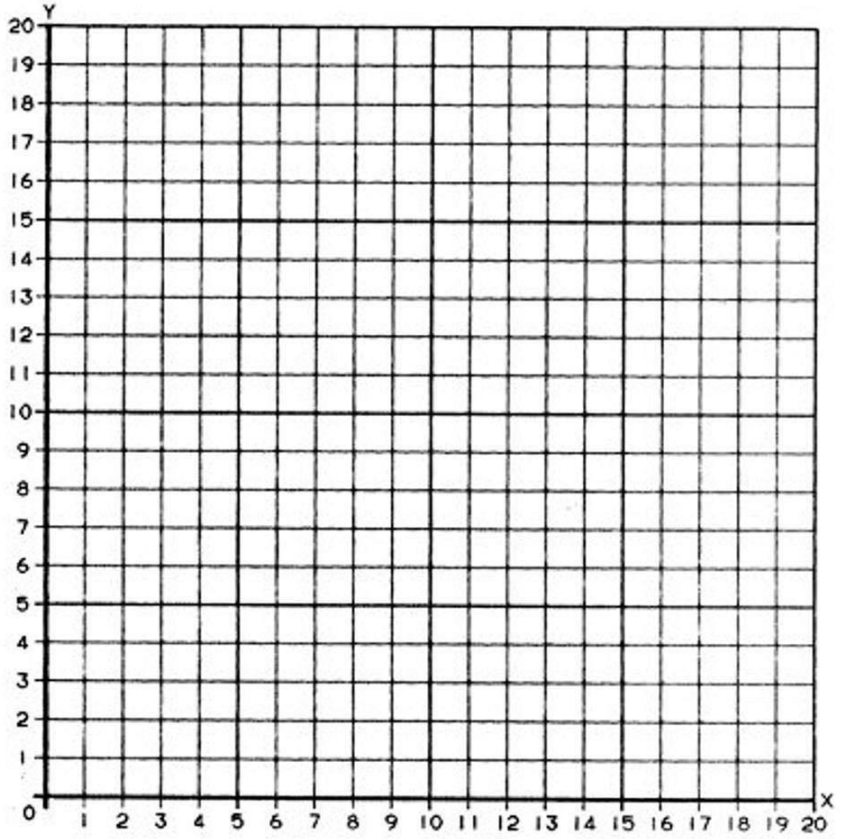
Plot the points and discover the quadrilateral.

(2,2) (3,5) (5,4) (6,2)



What is the name of the quadrilateral?



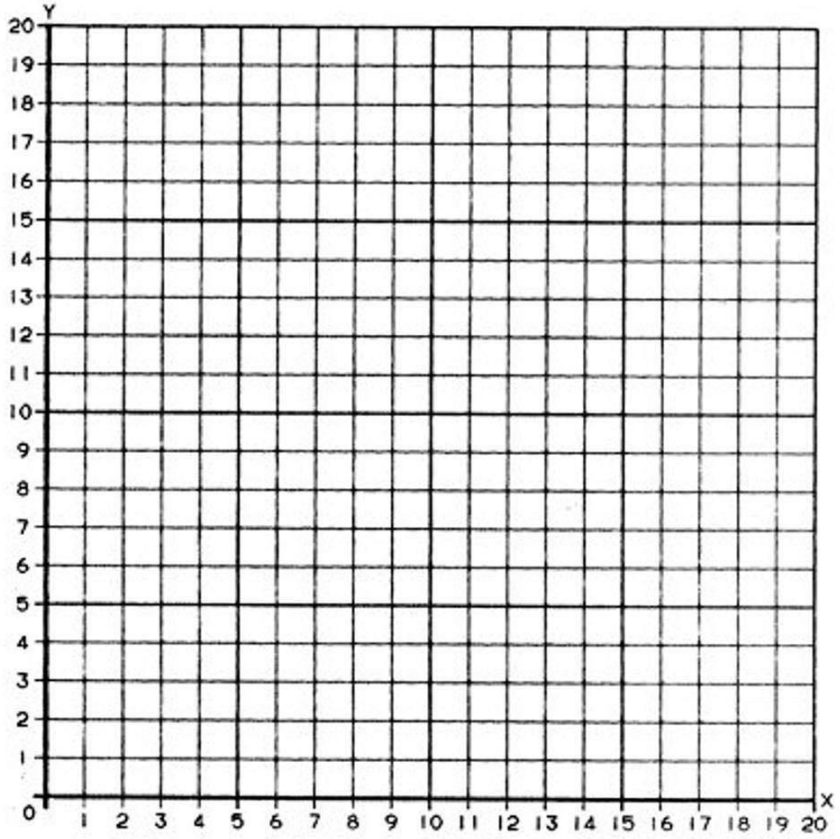


Construction of regular polygons.

Locate the ordered pairs

A. (3,12)
B. (3,19)
C. (10,19)
D. (10,12)

Draw the polygon by connecting the vertices.

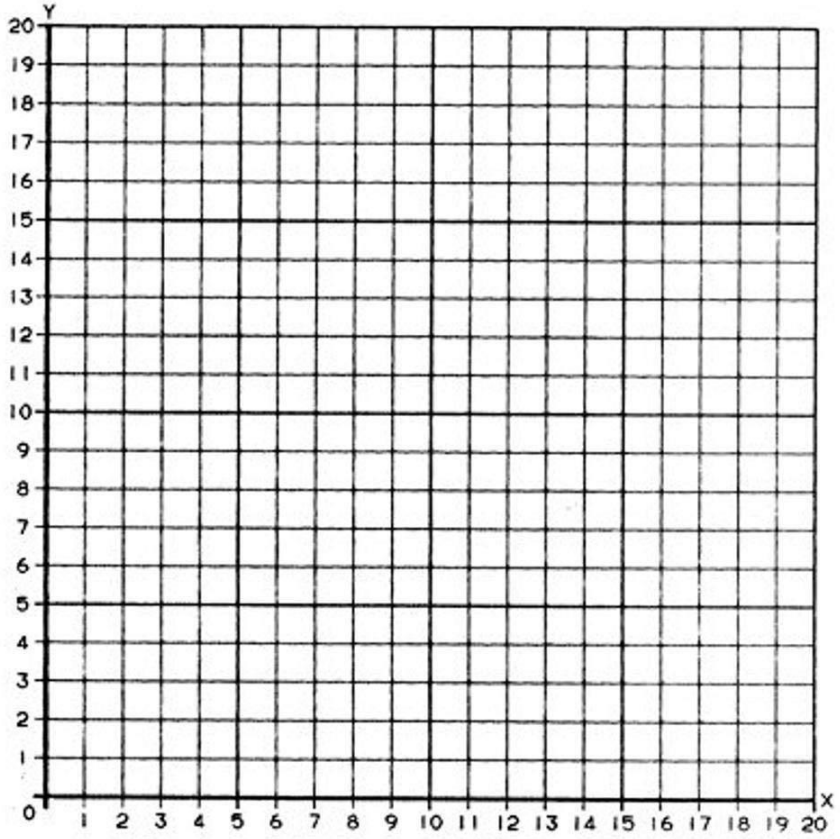


Construction of polygons.

Locate the ordered pairs (Using the same cartesian plane)

A.(7,3)
B.(7,9)
C.(11,3)

Draw the polygon by connecting the vertices and classify it according to the sides and angles.



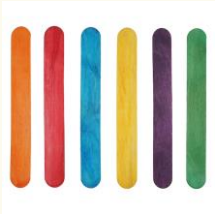
Construction of polygons.

Locate the ordered pairs (Using the same cartesian plane)

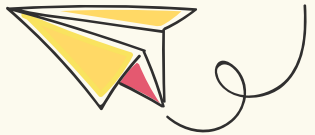
A.(17,8)
B.(17,13)
C.(19,15)
D.(20,13)
E.(20,8)

Draw the polygon by connecting the vertices and classify it.

Wrap - Up



Answer the question. How many points do you need to place to build a heptagon?



2nd Hour

Date:

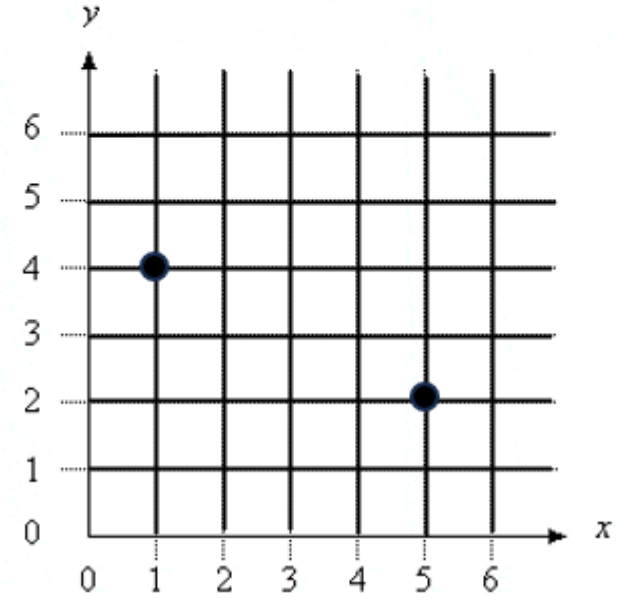
Ach. Ind.: To perform transformations on the plane: rotation, translation, reflection, symmetry, homothecy (or homothety) is a transformation of space which dilates distances with respect to a fixed point.

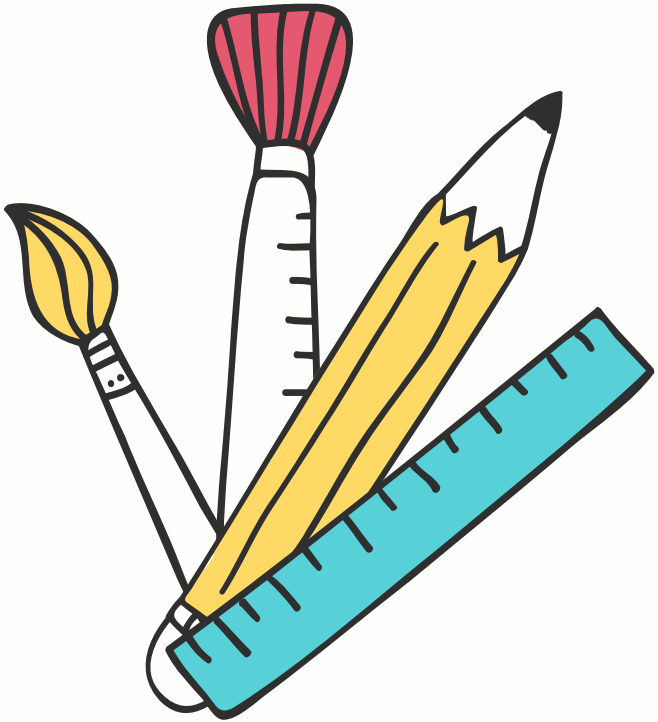
Warm Up

¡Mini Challenge!

Math Fifth grade

What ordered pairs are needed to make a rectangle on the plane? (,) (,)





VIDEO:

https://www.youtube.com/watch?v=VJTxv-tRKj0

GLOSSARY

Reflection: A reflection flips a shape over to create a mirror image.

Rotation: A rotation turns a shape.

Translation: A translation moves or slides a shape.

Dotted line: A line that is made up of a series of dots.

Line of reflection: A line of reflection is an imaginary line that acts as a mirror to create a reflected image of a shape.

Enlargement: An enlargement is a transformation that changes the size of a shape by multiplying its side lengths by a scale factor.

GLOSSARY

Reduction: reduction is a transformation that makes a shape smaller by decreasing its dimensions by a constant factor.

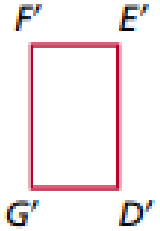
Clockwise: Clockwise means moving in the same way or direction as the hands of a clock move.

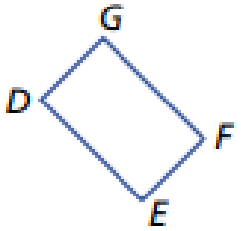
Counterclockwise: Moving in the opposite direction to the rotation of the hands of a clock.

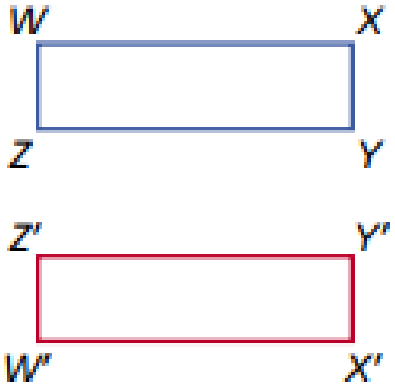
Congruence: congruence means that two shapes have the same size and shape.

Similarity: similarity means that two or more figures have the same shape, but may have different sizes

EXERCISES: Identify each transformation

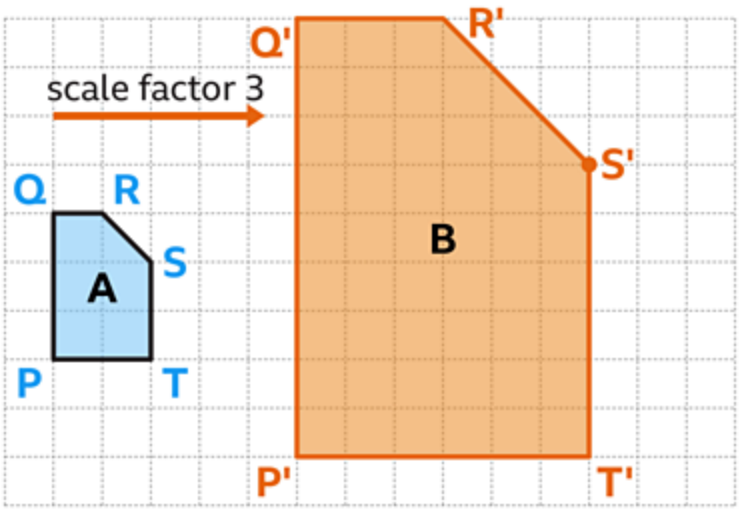






Are they similar or congruent figures?

EXERCISES: Identify the transformation

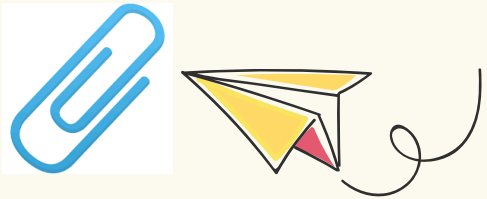


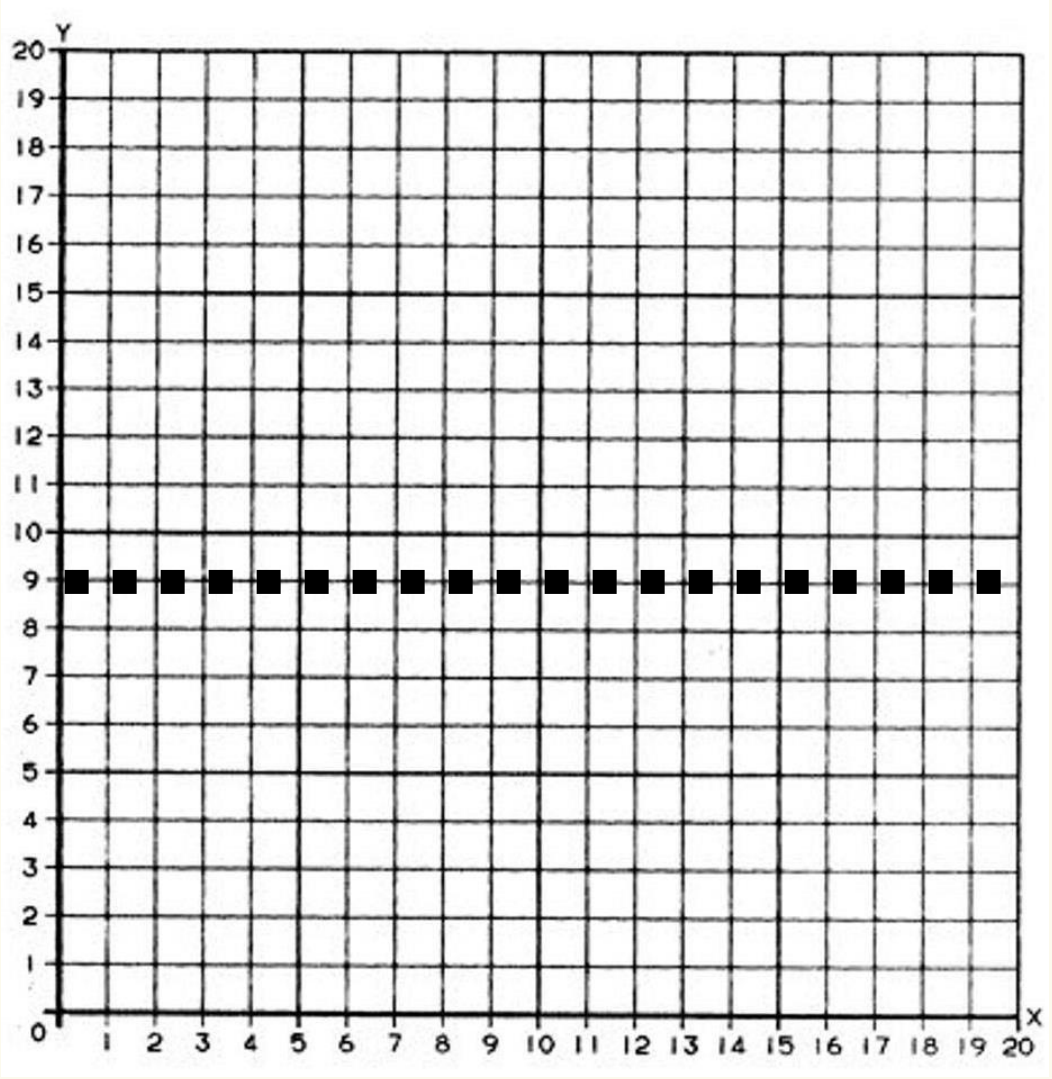
Are they similar or congruent figures?

Activity

- Draw a cartesian plane (20 units per axis).
- Locate the ordered pairs: P=(3,12); Q=(3,19); R=(5,19); S=(5,14); T=(7,14); U=(7,12).
- Join the points and color the polygon.
- Move the figure 8 units to the right and 2 units to the down
- Flip the figure over the dotted line (See the example)
- What are the ordered pairs of the transformed figure?

(___,___) (___,___)(___,___) (___,___)(___,___) (___,___)

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
X