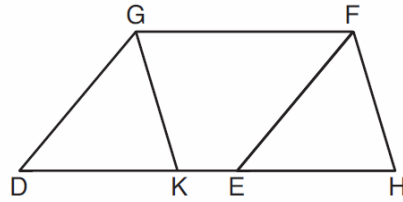


Name.....Period.....
Geometry
Weekly Homework 11012019

Question 1.

Given: Parallelogram $DEFG$, K and H are points on \overrightarrow{DE} such that $\angle DGK \cong \angle EFH$ and \overline{GK} and \overline{FE} are drawn

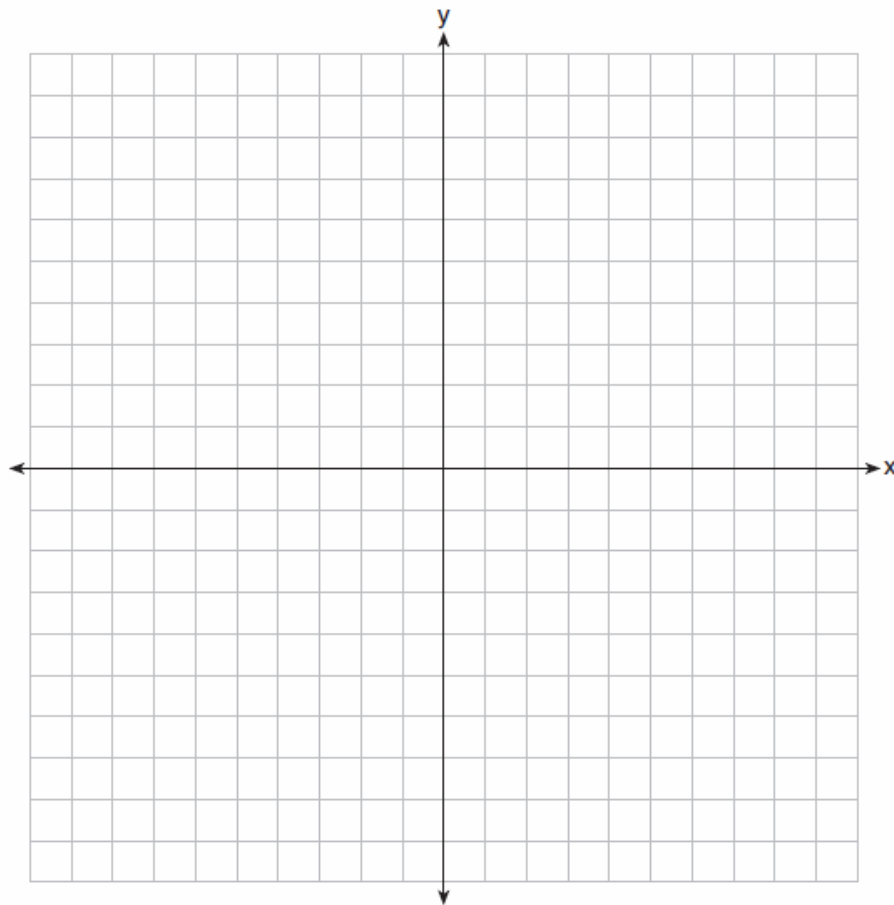


Prove: $\overline{DK} \cong \overline{EH}$

Question 2.

On the set of axes below, graph and label circle A whose equation is $(x + 4)^2 + (y - 2)^2 = 16$ and circle B whose equation is $x^2 + y^2 = 9$.

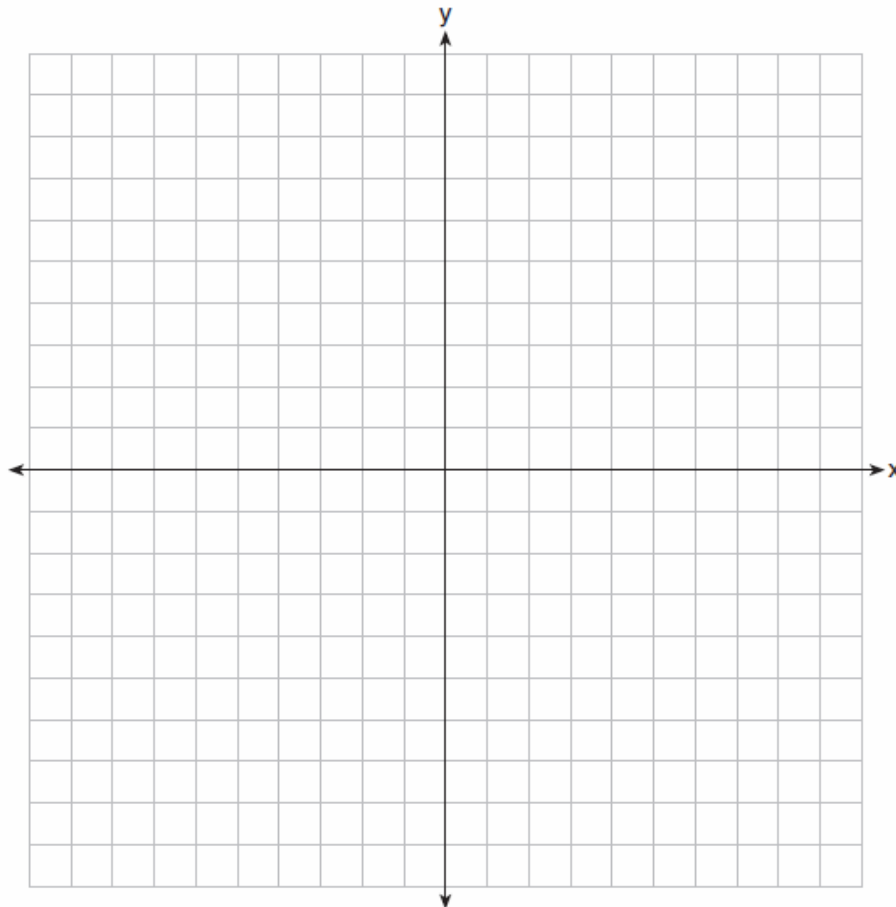
Determine, in simplest radical form, the length of the line segment with endpoints at the centers of circles A and B .



Question 3.

On the set of axes below, graph the locus of points 5 units from the point $(2, -3)$ and the locus of points 2 units from the line whose equation is $y = -1$.

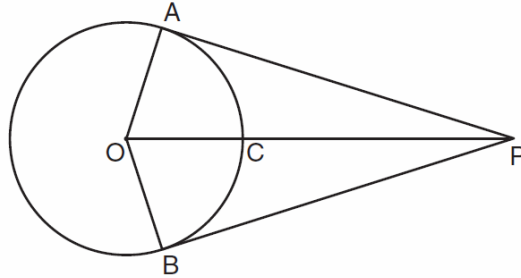
State the coordinates of all points that satisfy *both* conditions.



Question 4.

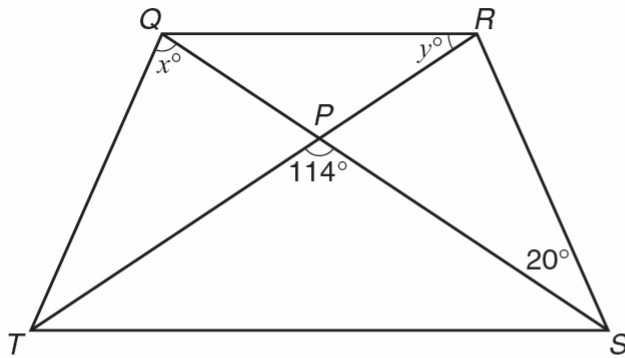
In the diagram below, \overline{PA} and \overline{PB} are tangent to circle O , \overline{OA} and \overline{OB} are radii, and \overline{OP} intersects the circle at C .

Prove: $\angle AOP \cong \angle BOP$



Question 5.

Look at this diagram.

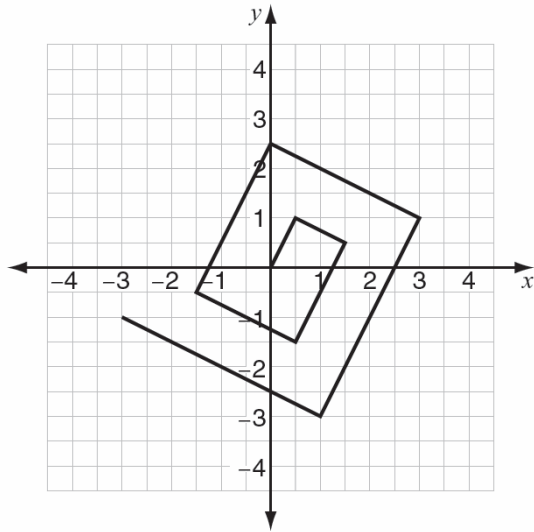


not drawn to scale

- Quadrilateral $QRST$ has diagonals \overline{QS} and \overline{RT} that intersect at point P .
 - Triangle QPT is congruent to triangle RPS ($\triangle QPT \cong \triangle RPS$).
- a. What is the value of x ? Show your work or explain how you know.
- b. What is the value of y ? Show your work or explain how you know.

Question 6.

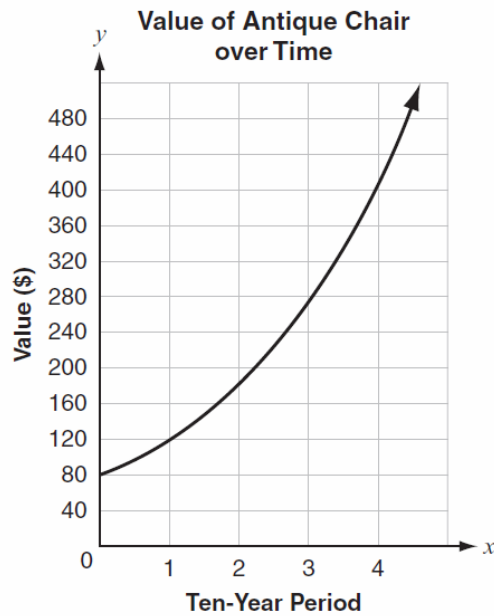
Starting at the origin, Nadia drew eight line segments on this coordinate grid.



Nadia continues her pattern. What is the slope of the 25th line segment she will draw? Show your work or explain how you know.

Question 7.

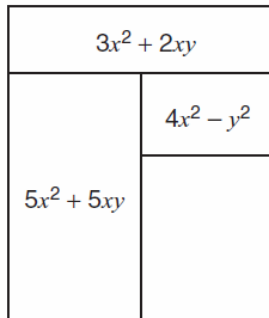
The value of an antique chair increases exponentially. This graph shows the chair's value over a set of four ten-year periods.



- By what amount did the value of the antique chair increase during the first ten-year period?
- By what percent did the value of the antique chair increase during each ten-year period? Show your work or explain how you know.
- During which ten-year period will the value of the antique chair reach \$1000? Show your work or explain how you know.

Question 8.

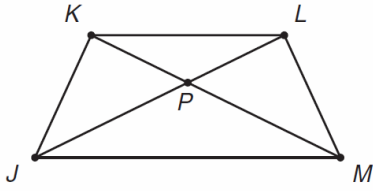
The expression inside each of these rectangles represents the area, in square units, of the rectangle.



- Write an algebraic expression in simplified form to represent the sum of the areas of all the rectangles.
- What is the total area, in square units, of the rectangles when $x = 5$ and $y = 2$?

Question 9.

Quadrilateral $JKLM$ has diagonals \overline{JL} and \overline{KM} that intersect at point P , as shown below.



Quadrilateral $JKLM$ is an isosceles trapezoid with \overline{KL} parallel to \overline{JM} .

- Given $\angle LKM$ is congruent to $\angle KLJ$, what other angle is congruent to $\angle LKM$? Use geometric reasoning to explain how you know.
- Use geometric reasoning to explain why triangle KPL is similar to triangle MPJ ($\triangle KPL \sim \triangle MPJ$).