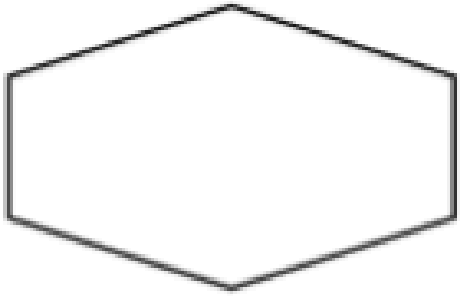
Name: _____

Unit 8: Polygons and Quadrilaterals
Review
(pages 44-50)

1. Find the sum of the measures of the interior angles of the polygon shown below. (1 point)

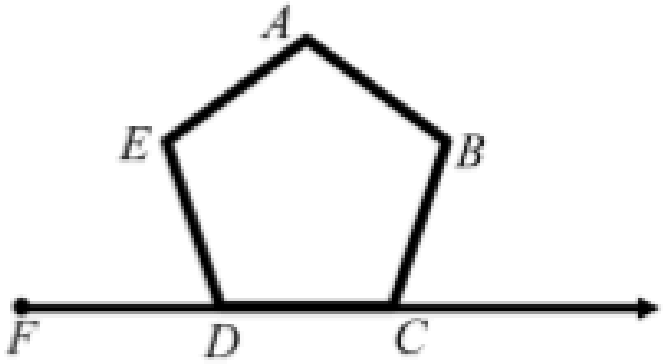


2. Find the measure of each exterior angle for a regular nonagon. Round to the nearest tenth if necessary. (1 point)

3. Find the measure of an interior angle of a regular polygon with 14 sides. Round to the nearest tenth if necessary. (1 point)

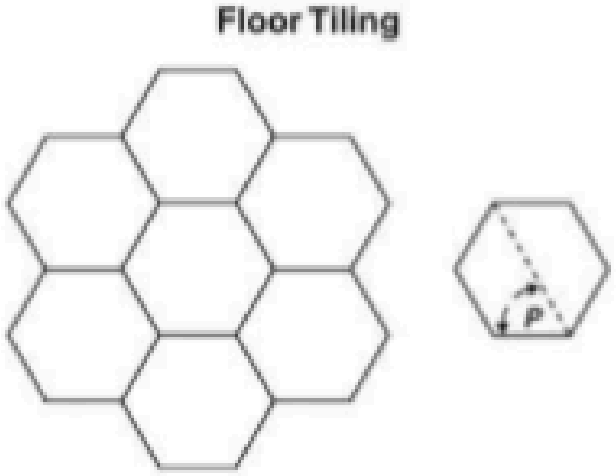
Use the following diagram for questions 4-5.

Pentagon *ABCDE* is a regular pentagon.



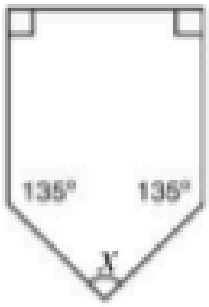
4. What is the measure of $\angle A$? (1 point)

5. What is the measure of $\angle EDF$? (1 point)
6. A floor is being covered with regular hexagonal tiles. A tile must be cut in half, as shown, to fit against a wall.



What is the measure of $\angle P$ in the cut tiles? (2 points)

7. In baseball, the home plate is a pentagon.

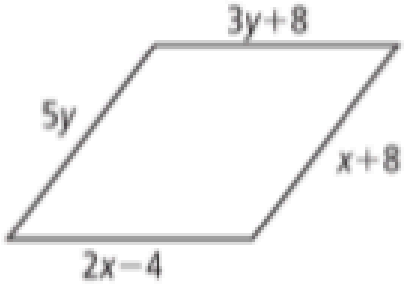


What is the measure of the angle at the bottom of the plate? (This angle is identified as x.) (2 points)

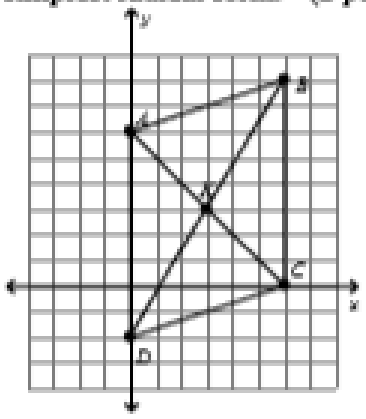
8. A convex pentagon has interior angles with measures $(5x - 12)°$, $(2x + 100)°$, $(4x + 16)°$, $(6x + 15)°$, and $(3x + 41)°$. Find x. (2 points)

9. What single additional piece of information is needed to prove that $WXYZ$ is a parallelogram? (1 point)

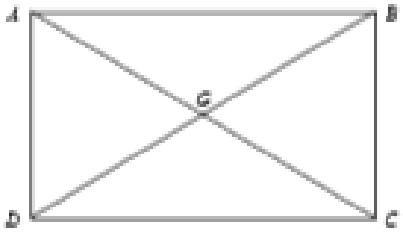
10. What values of x and y would make the quadrilateral shown below a parallelogram? (2 points)



11. What is the distance between points A and C? If the answer is irrational, write it in simplest radical form. (2 points)



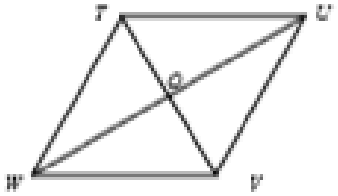
Use the following diagram for question 10-11.
Quadrilateral *ABCD* is a rectangle.



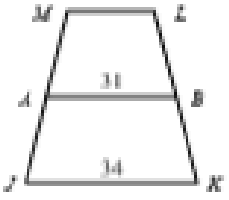
12. If $AO = -4k + 24$ and $DO = 9k + 102$, find BD. (2 points)

13. If $\angle ADB = 2y + 40$ and $\angle CDB = -3y + 51$, find $\angle CBD$.

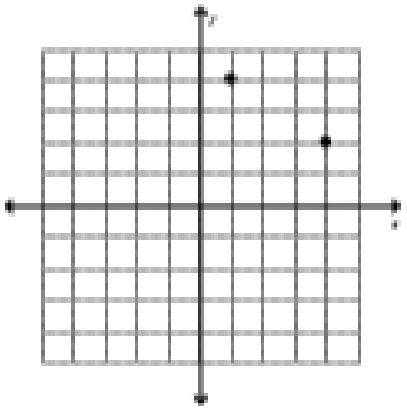
14. In rhombus *TUVW*, if $m\angle TUW = 34$, find $m\angle UVT$.



15. For trapezoid *JKLM*, *A* and *B* are midpoints of the legs. Find *ML*.



16. Two vertices of a square are shown on the coordinate plane below. Write the coordinates of the remaining two vertices. (2 points)



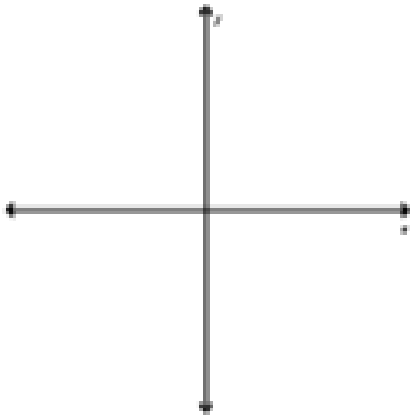
Each set of vertices below is for a parallelogram. Use coordinate geometry to determine whether the parallelogram is a rhombus, a rectangle, or a square. List all that apply. (3 points each)

17. $A(-2, 6)$, $B(-2, -1)$, $C(-9, -1)$, $D(-9, 6)$

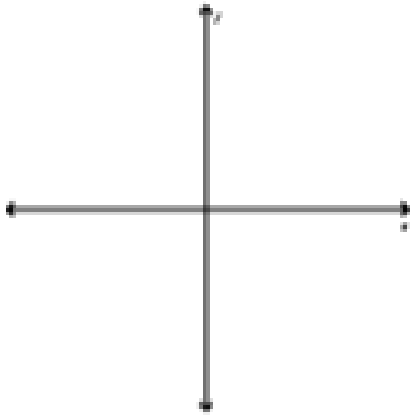
18. $M(-1, 1)$, $N(1, -2)$, $O(5, 0)$, $P(3, 3)$

Position and label each quadrilateral on the coordinate plane. (2 points each)

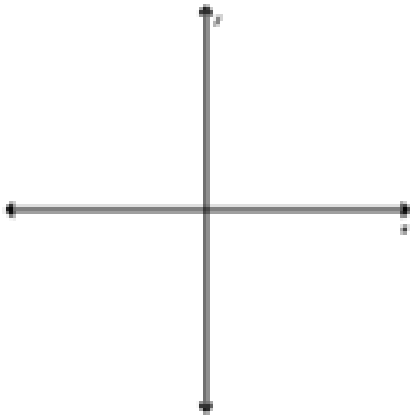
19. a rectangle centered at the origin with base $2b$ and height $2h$



20. square with side length $4k$ units



21. parallelogram with side length a units and height b units



22. a) Draw a rectangle with side lengths a and b.
    b) Give the coordinates of each vertex.
    c) Use coordinate geometry to prove that the diagonals are congruent.
    d) Explain your work and reasoning.

    (4 points)