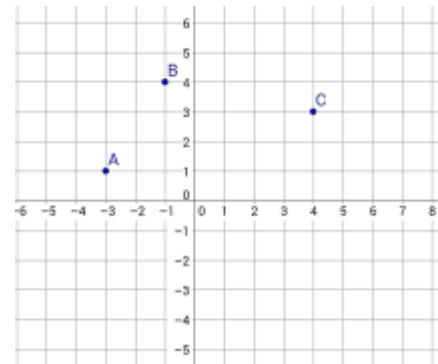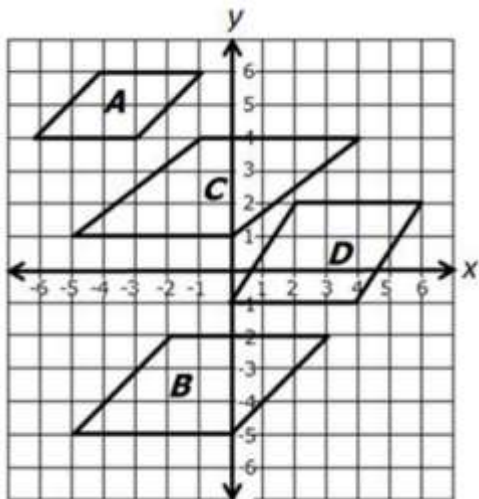<u>GPE-1: Coordinate Quads and Parallel/Perpendicular Lines</u>

27. ABCD is a parallelogram. Find the coordinates of point D.
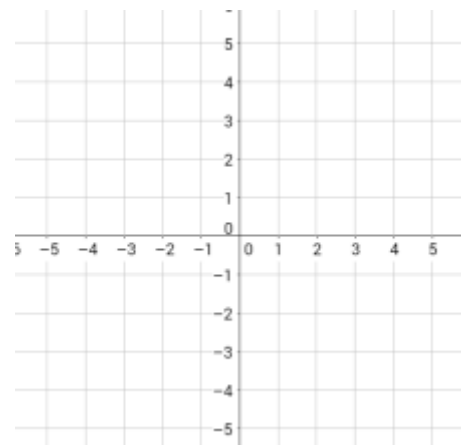
28. Which of these is a rhombus? Explain how you know.

29.   Quadrilateral $CHAT$ (not shown) has coordinates $C(-5,-1)$ $H(1,3)$ $A(3,0)$ and $D(-3,-4)$. What is the <u>most specific</u> name for $CHAT$?

[parallelogram   rectangle   rhombus   square]

30.   Does the point $(2, \sqrt{21})$ lie on a circle centered at the origin $(0,0)$ with radius 5? Show the calculations that lead to your conclusion.

31. Write the equation of the perpendicular bisector of a line segment with endpoints $A(5,1)$ and $B(-3,3)$.

32. Are the following lines parallel, perpendicular, or neither? Justify your answer. $\begin{cases} 2x + 3y = 9 \\ 6x - 4y = 12 \end{cases}$

33. Graph the line that passes thru (1,3) and is perpendicular to $y = -\frac{2}{3}x + 1$. Then graph the a line also passing thru (1,3) that is parallel to $y = -\frac{2}{3}x + 1$. Label each clearly.
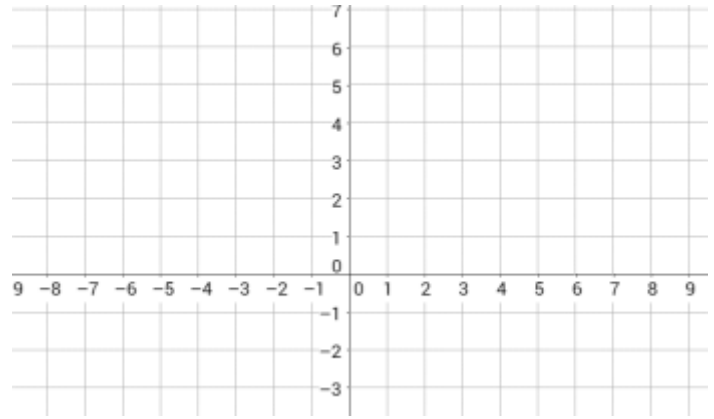
34. Line t passes through the points $(0,-1)$ and $(2,2)$. Line p passes through $(-1,1)$. Find the coordinates of a another point on line p if $p \parallel t$.
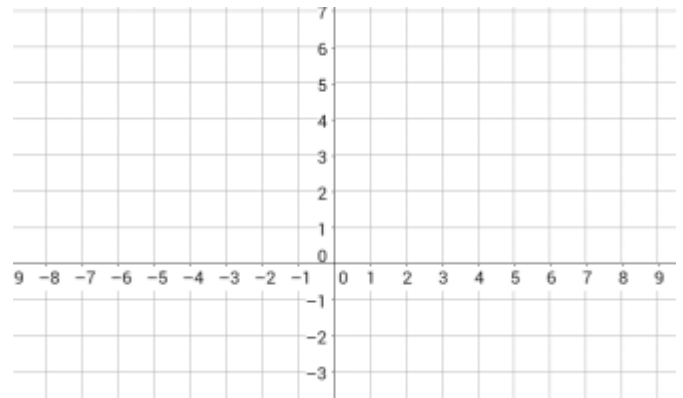
35. Line segment $\overline{PQ}$ has endpoint P(4,6). If M is the midpoint of $\overline{PQ}$ and $M(1,5)$, find the coordinates of Q
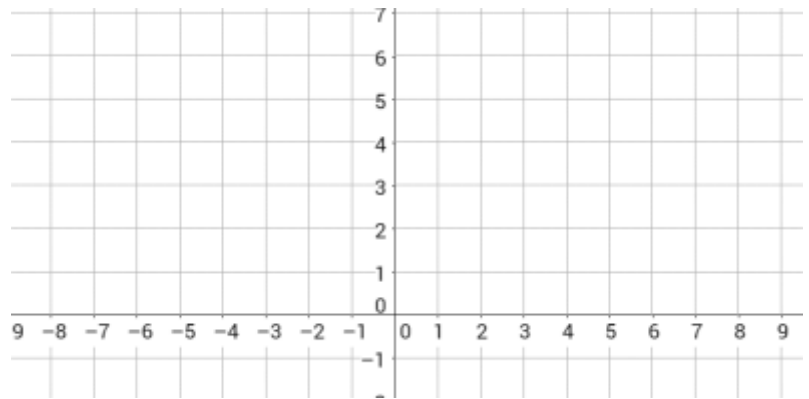
36. Find the perimeter and area of $\triangle ABC$.