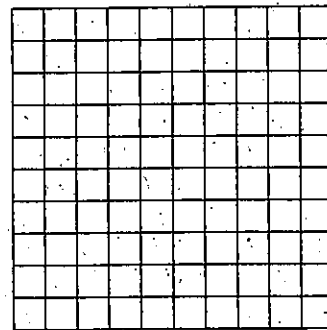


Coordinate Geometry

For use after Chapter 13

Complete.

- The distance between $(4, 4)$ and $(-3, -2)$ is $\sqrt{85}$.
- The center of the circle $(x + 2)^2 + (y - 1)^2 = 16$ is $(-2, 1)$.
The radius is 4 .
- Given $A(-7, 2)$ and $B(1, -6)$, the slope of $\vec{AB} = -1$, $AB = 8\sqrt{2}$, and the midpoint of \vec{AB} is $(-3, -2)$.
- If line j has slope -2 , then any line parallel to j has slope -2 and any line perpendicular to j has slope $\frac{1}{2}$.
- The slope of a vertical line is not defined.
- Given $A(3, 0)$ and $B(0, 4)$, $\vec{AB} = (-3, 4)$ and $|\vec{AB}| = 5$.
- If $M(-2, 0)$ is the midpoint of \overline{XY} and $X = (-4, 1)$, then $Y = (0, -1)$.
- Find the vector sum: $(-5, 3) + 2(1, -6) = (-3, -9)$
- The slope of the line $y = -3x + 2$ is -3 . Its x -intercept is $\frac{2}{3}$ and its y -intercept is 2 .
- The point of intersection of the lines $3x + y = 5$ and $x - 2y = 4$ is $(2, -1)$. Graph the equations.



Ex. 10

Write an equation of the line described.

- the line with y -intercept 12 and slope $-\frac{1}{4}$ $y = -\frac{1}{4}x + 12$
- the line with x -intercept -1 and y -intercept 3 $y = 3x + 3$
- the horizontal line through $(-8, 5)$ $y = 5$
- the vertical line through $(-3, 3)$ $x = -3$
- the line through $(-3, -2)$ with slope 2 $y = 2x + 4$

- $OPQR$ is an isosceles trapezoid.
 - Give the coordinates of Q without introducing any new letters. _____
 - Use coordinate geometry to show that the diagonals of $OPQR$ are congruent.

