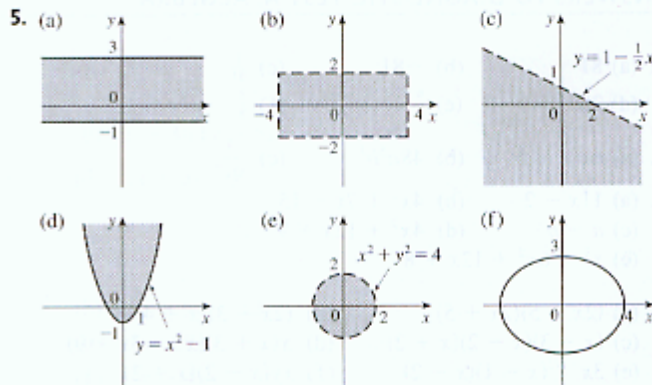


B DIAGNOSTIC TEST: ANALYTIC GEOMETRY

- Find an equation for the line that passes through the point $(2, -5)$ and
 - has slope -3
 - is parallel to the x -axis
 - is parallel to the y -axis
 - is parallel to the line $2x - 4y = 3$
- Find an equation for the circle that has center $(-1, 4)$ and passes through the point $(3, -2)$.
- Find the center and radius of the circle with equation $x^2 + y^2 - 6x + 10y + 9 = 0$.
- Let $A(-7, 4)$ and $B(5, -12)$ be points in the plane.
 - Find the slope of the line that contains A and B .
 - Find an equation of the line that passes through A and B . What are the intercepts?
 - Find the midpoint of the segment AB .
 - Find the length of the segment AB .
 - Find an equation of the perpendicular bisector of AB .
 - Find an equation of the circle for which AB is a diameter.
- Sketch the region in the xy -plane defined by the equation or inequalities.
 - $-1 \leq y \leq 3$
 - $|x| < 4$ and $|y| < 2$
 - $y < 1 - \frac{1}{2}x$
 - $y \geq x^2 - 1$
 - $x^2 + y^2 < 4$
 - $9x^2 + 16y^2 = 144$

ANSWERS TO DIAGNOSTIC TEST B: ANALYTIC GEOMETRY

- $y = -3x + 1$
 - $x = 2$
- $(x + 1)^2 + (y - 4)^2 = 52$
- Center $(3, -5)$, radius 5
- $-\frac{4}{3}$
 - $4x + 3y + 16 = 0$; x -intercept -4 , y -intercept $-\frac{16}{3}$
 - $(-1, -4)$
 - 20
 - $3x - 4y = 13$
 - $(x + 1)^2 + (y + 4)^2 = 100$



If you have had difficulty with these problems, you may wish to consult the Review of Analytic Geometry on the website www.stewartcalculus.com.