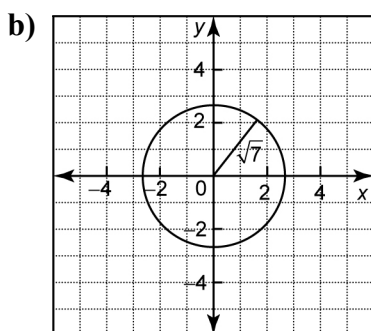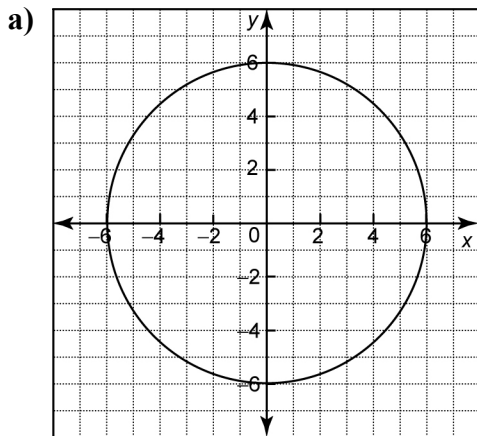# Section 2.4 Practice Master

1. Determine an equation for each circle.

a)

b)

2. State the radius of the circle defined by each equation and give the coordinates of one point on the circle.
a) $x^2 + y^2 = 49$ **b)** $x^2 + y^2 = 16$
c) $x^2 + y^2 = 64$ **d)** $x^2 + y^2 = 1.44$

3. Find an equation for the circle centred at the origin that passes through each point.
a) $(3, -4)$ **b)** $(-5, 2)$
c) $(3, 7)$ **d)** $(-6, -2)$

4. Determine whether each point is on, inside, or outside the circle defined by $x^2 + y^2 = 26$.
a) $(1, 3)$ **b)** $(-4, 6)$ **c)** $(1, 5)$

5. Determine an equation for the circle that has a diameter with endpoints B$(-4, 7)$ and C$(4, -7)$.

6. The point A$(4, b)$ lies on the circle defined by $x^2 + y^2 = 25$.
a) Find the possible value(s) of b.
b) Use a graph to show that the point(s) corresponding to the possible value(s) of b are on the circle.

7. a) Graph the circle defined by $x^2 + y^2 = 13$.
b) Verify algebraically that the points M$(-3, 2)$ and N$(2, -3)$ are on the circle.
c) Find an equation in the form $y = mx + b$ for the right bisector of chord MN.

8. a) Graph the circle defined by $x^2 + y^2 = 45$.
b) Verify algebraically that the line segment joining P$(-3, 6)$ and Q$(6, -3)$ is a chord of this circle.
c) Find an equation in the form $y = mx + b$ for the right bisector of chord PQ.

9. a) Graph the circle defined by $x^2 + y^2 = 100$.
b) Verify algebraically that the point D$(6, -8)$ lies on this circle.
c) Construct the line segment DO. Determine the slope of the radius DO.
d) Draw the line that is perpendicular to the line segment DO through the point D. Determine the slope of this line.
e) Determine an equation for the tangent line in part d).