51. Using $h = 2$, $k = -1$, and $r = 3$, we get $(x-2)^2 + (y-(-1))^2 = 3^2 \quad \Leftrightarrow$ $(x-2)^2 + (y+1)^2 = 9$.

53. The equation of a circle centered at the origin is $x^2 + y^2 = r^2$. Using the point $(4, 7)$ we solve for r^2. This gives $(4)^2 + (7)^2 = r^2 \quad \Leftrightarrow \quad 16 + 49 = 65 = r^2$. Thus, the equation of the circle is $x^2 + y^2 = 65$.

55. The center is at the midpoint of the line segment, which is $\left(\frac{-1+5}{2}, \frac{1+5}{2}\right) = (2, 3)$. The radius is one half the diameter, so $r = \frac{1}{2}\sqrt{(-1-5)^2 + (1-5)^2} = \frac{1}{2}\sqrt{36+16} = \frac{1}{2}\sqrt{52} = \sqrt{13}$. Thus, the equation of the circle is $(x-2)^2 + (y-3)^2 = \left(\sqrt{13}\right)^2$ or $(x-2)^2 + (y-3)^2 = 13$.

57. Since the circle is tangent to the x-axis, it must contain the point $(7, 0)$, so the radius is the change in the y-coordinates. That is, $r = |-3 - 0| = 3$. So the equation of the circle is $(x-7)^2 + (y-(-3))^2 = 3^2$, which is $(x-7)^2 + (y+3)^2 = 9$.

59. From the figure, the center of the circle is at $(-2, 2)$. The radius is the change in the y-coordinates, so $r = |2 - 0| = 2$. Thus the equation of the circle is $(x-(-2))^2 + (y-2)^2 = 2^2$, which is $(x+2)^2 + (y-2)^2 = 4$.