52. Using $h = -1$, $k = -4$, and $r = 8$ we get $(x - (-1))^2 + (y - (-4))^2 = 8^2 \quad \Leftrightarrow$ $(x + 1)^2 + (y + 4)^2 = 64$.

54. Using $h = -1$ and $k = 5$ we get $(x - (-1))^2 + (y - 5)^2 = r^2 \quad \Leftrightarrow \quad (x + 1)^2 + (y - 5)^2 = r^2$. Next, using the point $(-4, -6)$, we solve for r^2. This gives $(-4 + 1)^2 + (-6 - 5)^2 = r^2 \quad \Leftrightarrow$ $130 = r^2$. Thus, the equation of the circle is $(x + 1)^2 + (y - 5)^2 = 130$.

56. The center is at the midpoint of the line segment, which is $\left(\frac{-1+7}{2}, \frac{3+-5}{2}\right) = (3, -1)$. The radius is one half the diameter, so $r = \frac{1}{2}\sqrt{(-1 - 7)^2 + (3 - (-5))^2} = 4\sqrt{2}$. Thus, the equation of the circle is $(x - 3)^2 + (y + 1)^2 = 32$.

58. Since the circle with $r = 5$ lies in the first quadrant and is tangent to both the x-axis and the y-axis, the center of the circle is at $(5, 5)$. Therefore, the equation of the circle is $(x - 5)^2 + (y - 5)^2 = 25$.

60. From the figure, the center of the circle is at $(-1, 1)$. The radius is the distance from the center to the point $(2, 0)$. Thus $r = \sqrt{(-1 - 2)^2 + (1 - 0)^2} = \sqrt{9 + 1} = \sqrt{10}$, and the equation of the circle is $(x + 1)^2 + (y - 1)^2 = 10$.