

- 43 (a) $P(2) = 1 - e^{-0.1144(2)} \approx 0.20$ and $P(20) = 1 - e^{-0.1144(20)} \approx 0.90$. There is a 20% chance that at least one tree will be located within a circle having a radius of 2 feet in this forest, and a 90% chance of at least one tree being located within a circle with a radius of 20 feet.
- (b) The graph of P is shown in *Figure 43*. (The horizontal line $y = 0.5$ is needed for part (c).) The larger the circle in the forest, the more likely it is to contain a tree. It is not very likely that a circle with a 1-foot radius contains a tree since trees do not grow that densely. However, there is an excellent chance that a circle with a radius of 100 feet contains at least one tree. Otherwise, it would be more of a clearing than a forest.
- (c) Graph $Y_1 = 1 - e^{(-0.1144X)}$ and $Y_2 = 0.5$. Their graphs intersect near $(6.06, 0.5)$. Thus, a circle with a radius of approximately 6.1 feet will have a 50–50 chance of having at least one tree contained in it. See *Figure 43*.

[0, 24, 2] by [0, 1, 0.1]

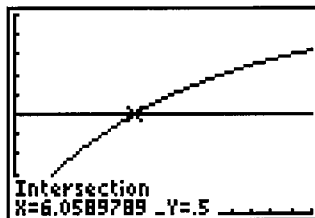


Figure 43