

Exercise 16

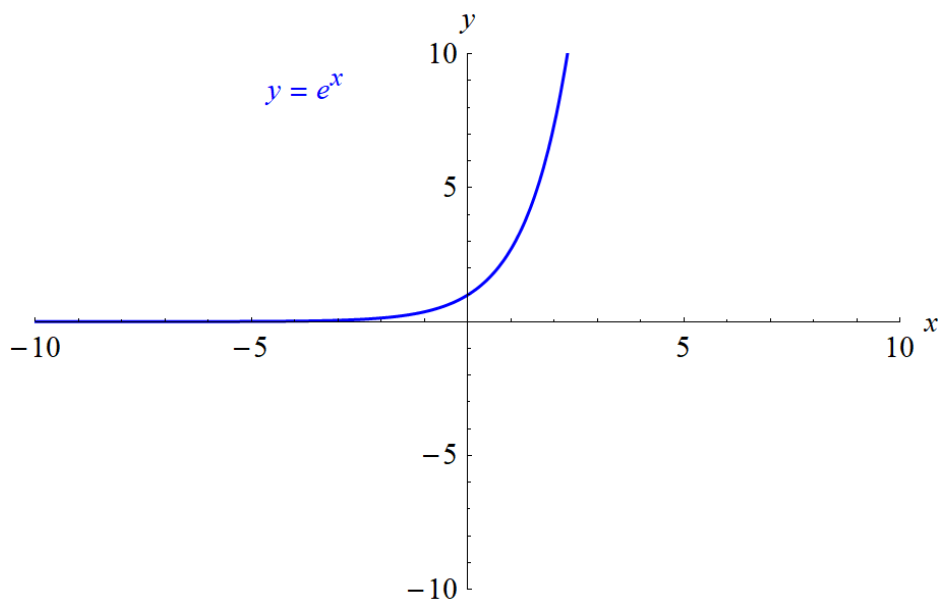
Make a rough sketch of the graph of the function. Do not use a calculator. Just use the graphs given in Figures 3 and 13 and, if necessary, the transformations of Section 1.3.

$$y = 2(1 - e^x)$$

Solution

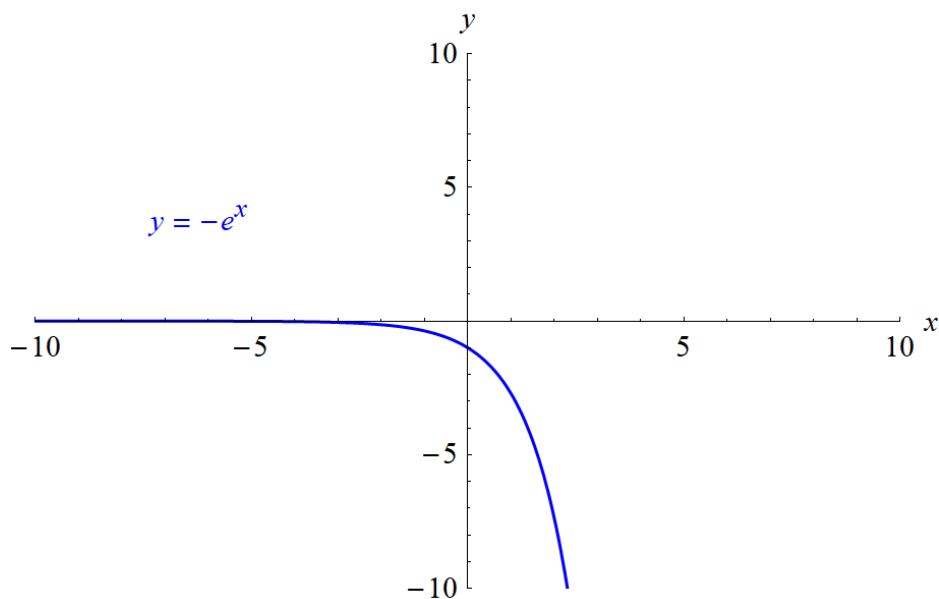
Start with the graph of

$$y = e^x.$$



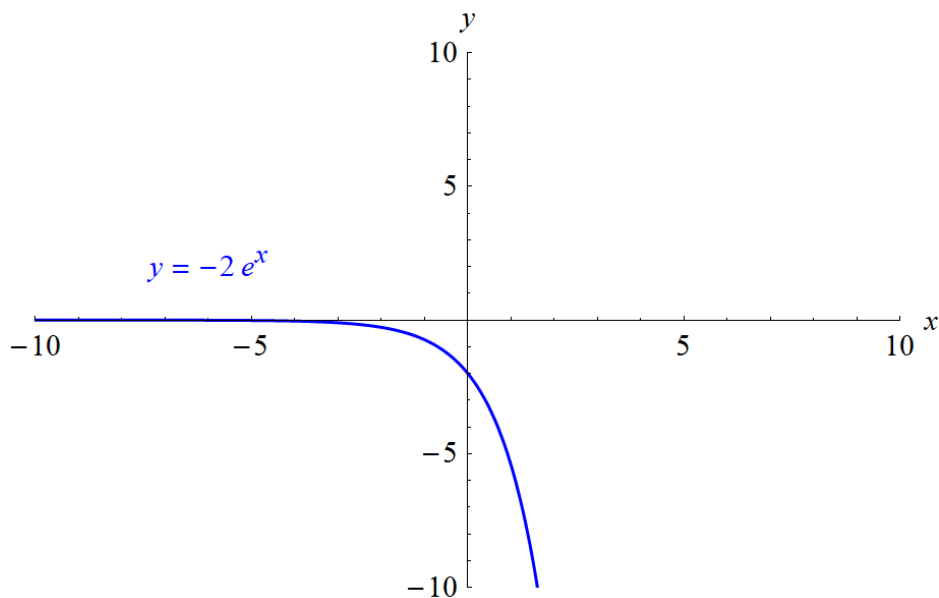
Place a minus sign in front to reflect the graph over the x -axis.

$$y = -e^x$$



Place a factor of 2 in front to stretch the graph vertically by a factor of 2.

$$y = -2e^x$$



Add 2 to this function to shift the graph up by 2 units vertically.

$$y = 2 - 2e^x = 2(1 - e^x)$$

