

Graph the following functions. Clearly label two points ***exactly*** (i.e. no decimals, leave “e” in the numbers.)  
[But you may use your calculator to get the decimal approximation so that you can draw the graph roughly to scale.]

1.  $f(x) = e^{2x}$

2.  $f(x) = 10e^{-x}$

3. If \$2000 is invested for  $x$  years at 4% compounded continuously, the future value is  $S = 2000e^{0.04x}$   
What will the amount be in 6 years?

4. The following function gives the sales  $S$  in millions of dollars as a function of the amount  $x$  spent (in millions of dollars) on advertising.  $S = 32.11 + 322.15(1 - e^{-x/15.3})$

1. How much in sales do they expect to make if they spend 0 on advertising?
2. How much in sales do they expect to make if they spend 1 million on advertising?
3. How much in sales do they expect to make if they spend 10 million on advertising?

1. Check graph w/calculator

2. Check graph w/calculator

3. \$2542.50

4. (a). \$32.11 million    (b). \$52.49 million    (c). \$186.69 million