

Find the derivative of the following functions:

1.  $f(x) = (x^2 - \sqrt{x})3^x$

2.  $f(x) = \frac{17e^x}{2^x}$

3.  $f(x) = \frac{4}{3+\sqrt{x}}$

4.  $f(x) = \frac{x^2+3x+1}{\sqrt{x}}$

If  $h(x) = f(x)g(x)$ , from looking at the figure below, and using the product rule, find:

$h'(1)$ ,  $h'(2)$ , and  $h'(3)$ .

