

## Differentials - Worksheet

1. Compute the equation of the tangent line to  $y = \sqrt{x}e^{x-1}$  at  $x = 1$ , then find the differential  $dy$  at  $y = \sqrt{x}e^{x-1}$  and evaluate it for  $x = 1$  and  $dx = 0.3$ .

2. Use differentials to approximate  $\sqrt[3]{8.1}$  using the value of the function  $\sqrt[3]{x}$  at  $x=8$ .