1. Find the slop of the function

$$f(x) = \frac{e^x}{\sec(x)} \tag{1}$$

at $x = \frac{\pi}{4}$.

2) Use the chain rule and evaluate the derivative of the function

$$f(x) = \frac{1}{\sqrt[5]{(2+6x^2)^3}} \tag{2}$$

Hint: In such problems, it would be easier for you to consider $f(x) = (2+6x^2)^{\frac{3}{5}}$

3) Approximate the value of $\sqrt{101}$ without your calculator!
Hint: For small value of h and a differentiable function f one always have $f(x+h) = f(x) + f'(x)h$. Here, $f(x) = \sqrt{x}$, $x = 100$, and $h = 1$.