

1. Let  $f(x) = x^{7x}$ . Robin uses the fact that  $\frac{d}{dx}x^n = nx^{n-1}$  and decides

$$f'(x) = 7x \cdot x^{7x-1} = 7x^{7x}$$

Jaime uses the fact that  $\frac{d}{dx}b^x = b^x \cdot \ln(b)$  together with the chain rule and concludes that

$$f'(x) = x^{7x} \cdot 7 \ln(x).$$

What is the actual derivative of  $f(x)$ ? If you did not agree with Robin and/or Jaime, explain where they went wrong.