

name: solution

1. Find the derivatives (4 points each)

(a) $y = x \ln(x) - x$

(b) $y = \ln((\cos(x))^2)$

$$(a) \frac{dy}{dx} = \ln(x) + x\left(\frac{1}{x}\right) - 1 = \ln(x)$$

$$(b) \frac{dy}{dx} = \frac{1}{(\cos(x))^2} \frac{d}{dx} ((\cos(x))^2) = \frac{1}{(\cos(x))^2} (2 \cos(x) \cdot (-\sin(x)))$$
$$= \frac{-2 \sin(x)}{\cos(x)}$$