$$f(r, s) = r \ln(r^7 + s^8) \quad \Rightarrow$$

$$f_r(r, s) = r \cdot \frac{7r^6}{r^7 + s^8} + \ln(r^7 + s^8) \cdot 1 = \frac{7r^7}{r^7 + s^8} + \ln(r^7 + s^8),$$

$$f_s(r, s) = r \cdot \frac{8s^7}{r^7 + s^8} + 0 = \frac{8rs^7}{r^7 + s^8}$$