

1.110 ⑩

$\log_a b = \log_{xy} \left( \frac{x^2 y}{z^2} \right) = \log_{xy} (x^2 y) - \log_{xy} (z^2) = \log_{xy} (x^2) + \log_{xy} y - 2 \log_{xy} z$   
 $= 2 \log_{xy} x + \log_{xy} y - 2 \log_{xy} z = \frac{2}{\log_x xy} + \frac{1}{\log_y xy} - \frac{2}{\log_z xy} =$   
 $= \frac{2}{\log_x x + \log_x y} + \frac{1}{\log_y x + \log_y y} - \frac{2}{\log_z x + \log_z y} = \frac{2}{1+3} + \frac{1}{\frac{1}{3}+1} - \frac{2}{\frac{1}{6}+1}$   
 $[\log_x y \cdot \log_y z = \frac{\log y}{\log x} \cdot \frac{\log z}{\log y} = \frac{\log z}{\log x} = \log_x z = 6]$

$= \frac{2}{4} + \frac{3}{4} - 3 = -\frac{7}{4}$