

pg. 364 # 79, 81, 84, 86, 87-90 + worksheet

$$79. \log\left(\frac{x}{y}\right) = \log x - \log y$$

$$81. \log(x^4 y^3) = \log x^4 + \log y^3 = 4\log x + 3\log y$$

$$84. \log_3 x + \log_3 y = \log_3(xy)$$

$$\begin{aligned} 86. \log a - 2\log b + 3\log c &= \log a - \log b^2 + \log c^3 \\ &= \log\left(\frac{ac^3}{b^2}\right) \end{aligned}$$

$$87. \log(xy) = \log x + \log y = -2 + 3 = 1$$

$$88. \log\left(\frac{x}{y}\right) = \log x - \log y = -2 - 3 = -5$$

$$89. \log\left(\frac{\sqrt{x}}{y^3}\right) = \log\sqrt{x} - \log y^3$$

$$= \frac{1}{2}\log x - 3\log y$$

$$= \frac{1}{2} \cdot -2 - 3 \cdot 3$$

$$= -1 - 9$$

$$= -10$$

$$90. \log(x^5 y^3) = \log x^5 + \log y^3$$

$$= 5 \log x + 3 \log y$$

$$= 5 \cdot 2 + 3 \cdot 3$$

$$= -1$$