Properties of Logarithms Introduction

Evaluate:

$\log_5(25) =$ $\qquad\qquad$ $\log_5(125) =$ $\qquad\qquad$ $\log_5(25 \cdot 125) =$

$\log_2\left(\dfrac{1}{8}\right) =$ $\qquad\qquad$ $\log_2(4) =$ $\qquad\qquad$ $\log_2\left(\dfrac{1}{8} \cdot 4\right) =$

$\log_b(b^5) =$ $\qquad\qquad$ $\log_b(b^2) =$ $\qquad\qquad$ $\log_b(b^5 \cdot b^2) =$

In general, $\log_b(x \cdot y) = $ _____

$\log_2(32) =$ $\qquad\qquad$ $\log_2(4) =$ $\qquad\qquad$ $\log_2\left(\dfrac{32}{4}\right) =$

$\log_3(9) =$ $\qquad\qquad$ $\log_3(81) =$ $\qquad\qquad$ $\log_3\left(\dfrac{9}{81}\right) =$

$\log_b(b^5) =$ $\qquad\qquad$ $\log_b(b^2) =$ $\qquad\qquad$ $\log_b\left(\dfrac{b^5}{b^2}\right) =$

In general, $\log_b\left(\dfrac{x}{y}\right) = $ _____

$\log_2(4^5) =$ $\qquad\qquad$ $5 \cdot \log_2(4) =$

$\log(100^{-2}) =$ $\qquad\qquad$ $-2 \cdot \log(100) =$

$\ln(e^7) =$ $\qquad\qquad$ $7 \cdot \ln(e) =$

In general, $\log_b(x^p) = $ _____