

Sheet #530. EVALUATING LOGARITHMIC EXPRESSIONS USING PROPERTIES

ANS.

- |    |                       |  | ANS.<br>↓ |
|----|-----------------------|--|-----------|
| 1. | $\log_2 (4 \cdot 16)$ | $= \log_2(4) + \log_2(16) = 2 + 4 =$                                   | 6         |
| 2. | $\ln e^{-2}$          | $= -2 \ln(e) =$  | -2        |
| 3. | $\log_2 4^3$          | $= 3 \log_2(4) = 3 \cdot 2 =$  | 6         |
| 4. | $\log_5 125$          | $= \log_5(5^3) = 3 \cdot 1 =$  | 3         |
| 5. | $\log_3 9^4$          | $= 4 \log_3(9) = 4 \cdot 2 =$  | 8         |
| 6. | $\log \frac{1}{10}$   | $= \log(10^{-1}) = -1(1) =$  | -1        |
| 7. | $\ln \frac{1}{e^3}$   | $= -3 \ln(e) =$  | -3        |
| 8. | $\log (0.01)^3$       | $= \log \left(\frac{1}{100}\right)^3 = 3 \log(10^{-2}) = 3 \cdot -2 =$ | -6        |