MORE PRACTICE: Properties of Logarithms

Let $\log_b X = 2$, $\log_b Y = 7$, $\log_b Z = 6$, $\log_b W = 3$.   Find:

1. $\log_b W^3$

2. $\log_b \dfrac{Y}{X}$

3. $\log_b \dfrac{Z}{X^2}$

4. $\log_b \dfrac{Y^2 X^3}{W^2}$

5. $\log_b \dfrac{1}{XYZW}$

6. $\log_b (X^2 Y^{-3})^{-1}$

Write the following as a single logarithm.

7. $\log_b X - \log_b W$

8. $\log_b W + 4 \log_b Y$

9. $5\log_b X + 4\log_b Z - \log_b Y$

10. $2\{\log_b Z + 3 \log_b W\}$