Algebra II – Day 51
Formative Ticket
Logarithm Review

1. Write the following in exponential form:

   (a) $\log_3 x = 9$
   (b) $\log_2 8 = x$
   (c) $\log_3 27 = x$
   (d) $\log_4 x = 3$
   (e) $\log_2 y = 5$
   (f) $\log_5 y = 2$

2. Write the following in logarithm form:

   (a) $y = 3^4$
   (b) $27 = 3^x$
   (c) $m = 4^2$
   (d) $y = 3^5$
   (e) $32 = x^5$
   (f) $64 = 4^x$

3. Solve the following:

   (a) $\log_3 x = 4$
   (b) $\log_m 81 = 4$
   (c) $\log_x 1000 = 3$
   (d) $\log_2 \frac{x}{2} = 5$
   (e) $\log_3 y = 5$
   (f) $\log_2 4x = 5$

1. Use the logarithm laws to simplify the following:

   (a) $\log_2 xy - \log_2 x^2$
   (b) $\log_2 \frac{8x^2}{y} + \log_2 2xy$
   (c) $\log_3 9xy^2 - \log_3 27xy$
   (d) $\log_4 (xy)^3 - \log_4 xy$
   (e) $\log_3 9x^4 - \log_3 (3x)^2$