**6-1 Skills Practice**

***Logarithms and Logarithmic Functions***

**Write each equation in exponential form.**

 **1.** $log\_{3}$ 243 = 5 **2.** $log\_{4}$ 64 = 3

 **3.** $log\_{9}$ 3 = $\frac{1}{2}$ **4.** $log\_{5}$ $\frac{1}{25}$ = –2

**Write each equation in logarithmic form.**

 **5.** $2^{3}$ = 8 **6.** $3^{2}$ = 9

 **7.** $8^{-2}$ = $\frac{1}{64}$ **8.** $\left(\frac{1}{3}\right)^{2}$ = $\frac{1}{9}$

**Evaluate each expression.**

 **9.** $log\_{5}$ 25 **10.** $log\_{9}$ 3

**11.** $log\_{10}$ 1000 **12.** $log\_{125}$ 5

**13.** $log\_{8}$ 512 **14.** $log\_{27}$ $\frac{1}{3}$

**Graph each function.**

**15.**  $f\left(x\right)=log\_{4} x$ **16.** *f*(*x*) = –$log\_{4} (x-3) $





**17.**  $f\left(x\right)= log\_{3}(x + 3) – 2 $ **18.** *f*(*x*) = – $log\_{5}$ *x* + 2

