**6-1 Practice**

***Logarithms and Logarithmic Functions***

**Write each equation in exponential form.**

 **1.** $log\_{6}$ 216 = 3 **2.** $log\_{2}$ 64 = 6 **3.** $log\_{3}$ $\frac{1}{81}$ = –4

**Write each equation in logarithmic form.**

 **4.** $5^{3}$ = 125 **5.** $7^{0}$ = 1 **6.** $3^{4}$ = 81

**Evaluate each expression.**

**7.** $log\_{3}$ 81 **8.** $log\_{10}$ 0.0001 **9.** $log\_{2}$ $\frac{1}{16}$ **10.** $log\_{\frac{1}{3}}$ 27

**11.** $log\_{9}$ 1 **12.** $log\_{8}$ 4 **13.** $log\_{7}$ $\frac{1}{49}$ **14.** $log\_{6}$ $6^{4}$

**Graph each function.**

**15.**  $f\left(x\right)=log\_{2} x$ **16.** *f*(*x*) = –$log\_{4}$ *x*



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



**19.**  $f\left(x\right)=log\_{3}\left(x-2\right)+3$ **20.**  $f\left(x\right)=-3 log\_{4}\left(x+1\right)-2$

