Section 6-1 : Exponential Functions

1. Given the function $f(x)=9^x$ evaluate each of the following.

(a) $f(-3)$ **(b)** $f(-1)$ **(c)** $f(0)$ **(d)** $f\left(\frac{1}{2}\right)$ **(e)** $f\left(\frac{3}{2}\right)$

2. Given the function $f(x)=8^x$ evaluate each of the following.

(a) $f\left(-\frac{2}{3}\right)$ **(b)** $f(-1)$ **(c)** $f(0)$ **(d)** $f(2)$ **(e)** $f\left(\frac{5}{3}\right)$

3. Given the function $f(x)=\left(\frac{1}{7}\right)^x$ evaluate each of the following.

(a) $f(-2)$ **(b)** $f(-1)$ **(c)** $f(0)$ **(d)** $f(2)$ **(e)** $f(4)$

4. Given the function $f(x)=\left(\frac{1}{16}\right)^x$ evaluate each of the following.

(a) $f(-2)$ **(b)** $f\left(-\frac{1}{4}\right)$ **(c)** $f(0)$ **(d)** $f(2)$ **(e)** $f\left(\frac{1}{4}\right)$

5. Sketch each of the following.

(a) $f(x)=\left(\frac{1}{3}\right)^x$ **(b)** $g(x)=\left(\frac{1}{3}\right)^x+2$ **(c)** $g(x)=\left(\frac{1}{3}\right)^{x+4}$

6. Sketch each of the following.

(a) $f(x)=5^x$ **(b)** $g(x)=5^x-4$ **(c)** $g(x)=5^{x-3}$

7. Sketch the graph of $f(x)=10^{x-2}+6$.

8. Sketch the graph of $f(x)=\left(\frac{1}{7}\right)^{x+4}-1$.

9. Sketch the graph of $f(x)=\mathbf{e}^{x+1}-2$.

10. Sketch the graph of $f(x)=\mathbf{e}^{x-4}-1$.