Name_____ Period_____ Date_____

Sec1H | **HW 7-1** | **Unit 7**

Shifting Exponential Functions

For each of the following functions do the following.

a) **Identify the growth factor.**
b) **Identify the y-intercept.**
c) **Identify the asymptote.**
d) **Make a table, and graph the function. Label the asymptote, & y-intercept.**

1. $y = 3^x + 2$

Growth Factor _____
y-intercept _____
Asymptote _____

2. $y = 3(2)^x - 1$

Growth Factor _____
y-intercept _____
Asymptote _____

3. $y = 4\left(\frac{1}{2}\right)^x - 2$

Growth Factor _____
y-intercept _____
Asymptote _____

4. $y = -9 \bullet \left(\frac{1}{3}\right)^x$

Growth Factor _____
y-intercept _____
Asymptote _____

5. $y = \frac{1}{2}(4)^x + 3$

Growth Factor _____
y-intercept _____
Asymptote _____

6. $y = -6 \cdot 2^x$

Growth Factor _____
y-intercept _____
Asymptote _____

Match the function with its correct asymptote and y-intercept.

7. $f(x) = 5(3)^x + 2$

8. $g(x) = 2(3)^x + 5$

9. $h(x) = 1(3)^x + 2$

A. asymptote: $y = 2$
y-intercept: (0, 3)

B. asymptote: $y = 2$
y-intercept: (0, 7)

C. asymptote: $y = 5$
y-intercept: (0,7)

Write an exponential function to match the criteria or graph.

10. Growth Factor : $\frac{2}{5}$
y-intercept: -4
asymptote: 2

11. Growth Factor : 4
y-intercept: $\frac{3}{4}$
asymptote: 2

12.