

Name: _____ Period: _____ Date _____

Exponential Growth and Decay Word Problems

Show all work when using equations.

For each equation below, identify the equation as exponential growth or decay, its initial value, the growth (or decay) factor, and the growth (or decay) rate.

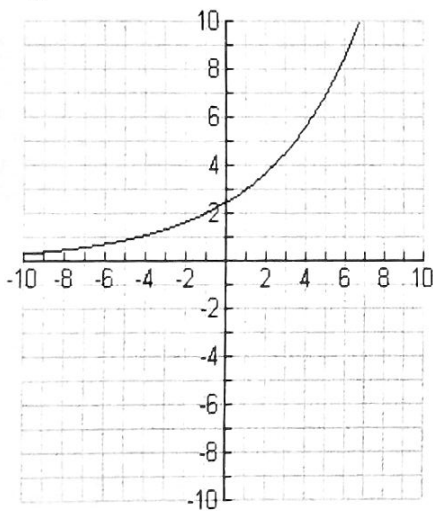
1. $y = 3.34(1.67)^x$

2. $y = 8(.54)^x$

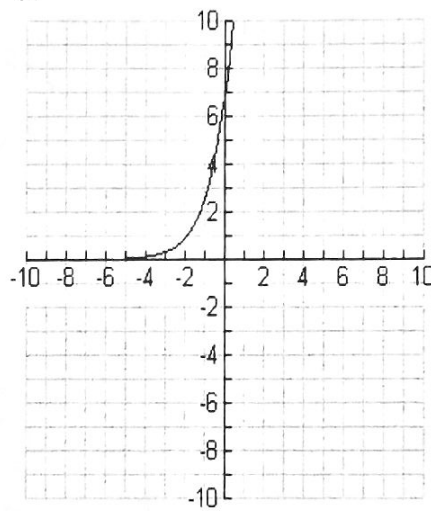
3. $y = 4.5(4)^x$

For each graph below, identify the graph as exponential growth or decay, and estimate its initial value.

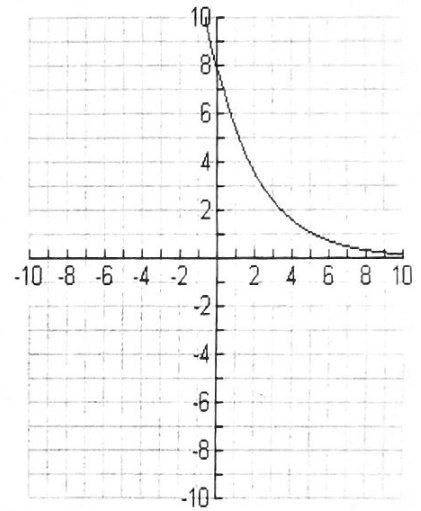
4.



5.



6.



For each table below, identify the equation as exponential growth or decay, its initial value, the growth (or decay) factor, the growth (or decay) rate, and write the equation of the exponential represented in the table.

7.

x	y
2	136.89
3	106.77
4	82.284
5	64.961
6	50.67

8.

x	y
4	180.55
5	241.94
6	324.2
7	434.43
8	582.14

9.

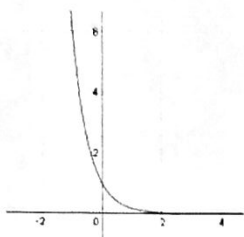
x	y
1	17.325
2	26.681
3	41.088
4	63.275
5	97.444

Identifying Exponential Growth and Decay

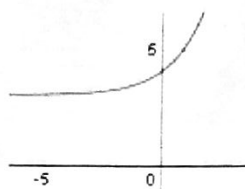
Class Work

State whether the given function is exponential growth or decay. Then find its horizontal asymptote and y-intercept.

107.



108.



109. $y = 3(4)^x$

110. $y = 0.5(3)^x$

111. $y = (0.5)^x + 4$

112. $y = 2(0.25)^x - 7$

113. $y = 100(0.3)^x + 50$

114. $y = 17(4)^{-x}$

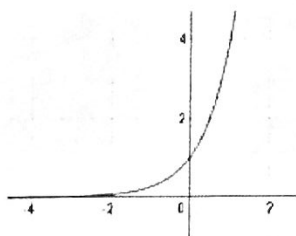
115. $y = 12(0.75)^{-x} + 6$

Identifying Exponential Growth and Decay

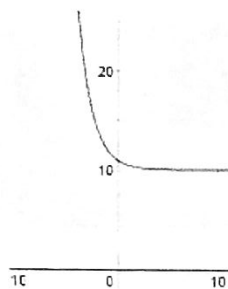
Homework

State whether the given function is exponential growth or decay. Then find its horizontal asymptote and y-intercept.

116.



117.



118. $y = 2(0.8)^x$

119. $y = 3(5)^{-x}$

120. $y = 4(0.3)^x + 2$

121. $y = 3(15)^x - 2$

122. $y = 60(0.2)^{-x} + 20$

123. $y = 15(3)^x$

124. $y = 10(0.35)^x + 4$

Spiral Review

Multiply:

125. $(2x + 5)^2$

Factor:

126. $81x^2 - 36$

Factor:

127. $4x^2 + 25$

Multiply:

128. $-5x^6(-3x^4y - x^3y^2)$