

# U1WS1 Exponential Growth/Decay

**For each problem, State whether the function models Exponential GROWTH or DECAY. Then state the INITIAL VALUE and the GROWTH/DECAY FACTOR.**

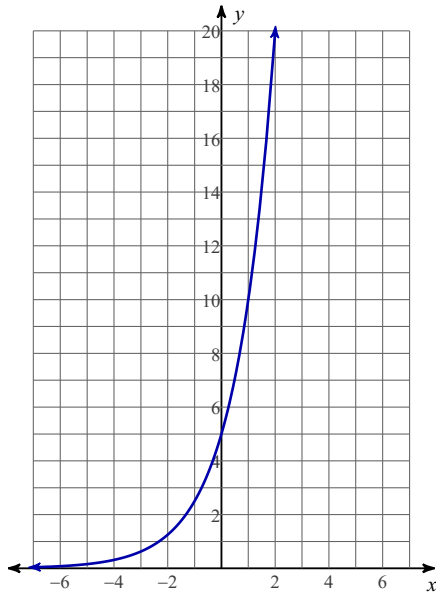
1)  $y = \frac{1}{4} \cdot 6^x$

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

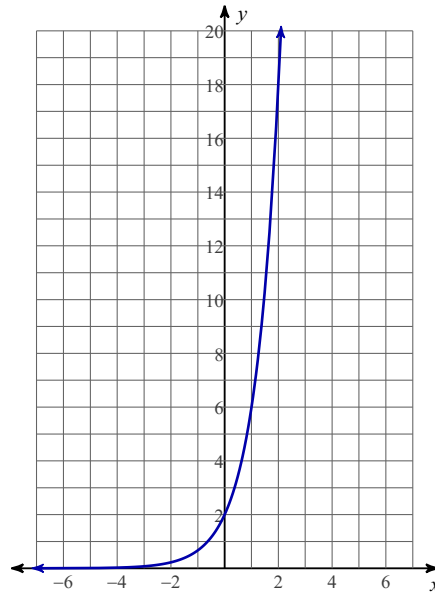
3)  $y = 2 \cdot 3^x$

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

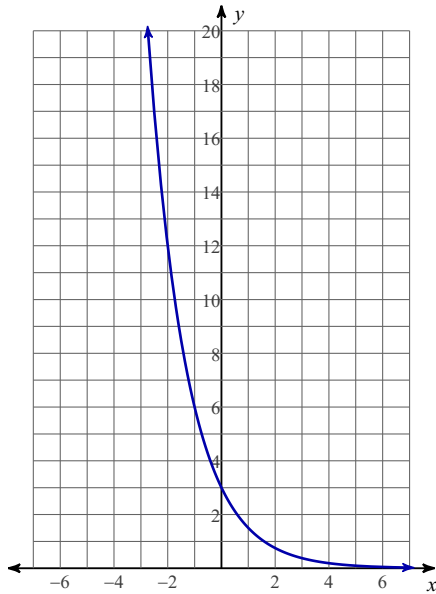
5)



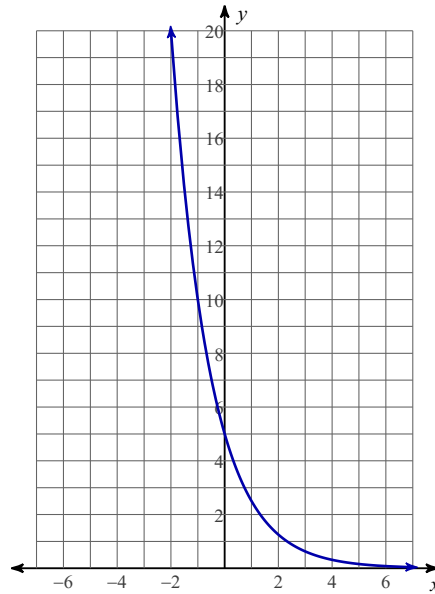
6)



7)

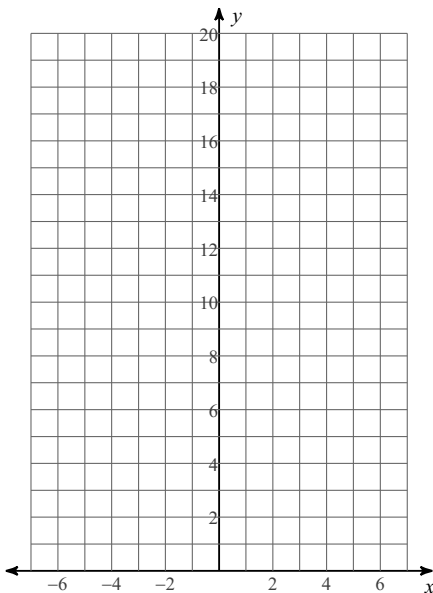


8)

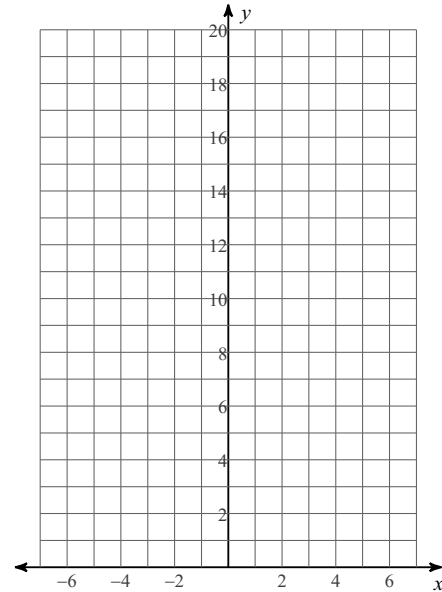


State the **GROWTH/DECAY FACTOR** and **INITIAL VALUE**. Then make a **TABLE** & Sketch the graph of each function.

9)  $y = 3 \cdot \left(\frac{1}{2}\right)^x$

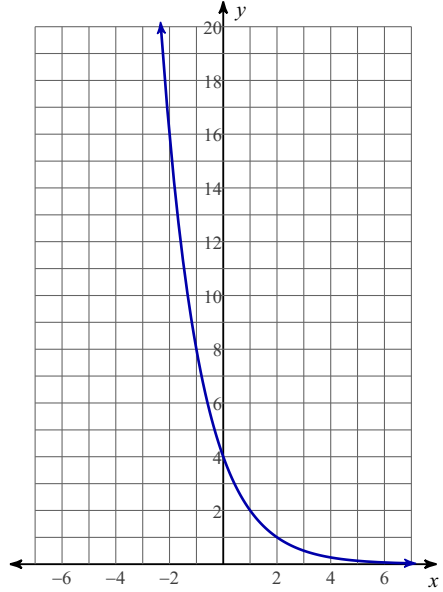


10)  $y = 5 \cdot 2^x$

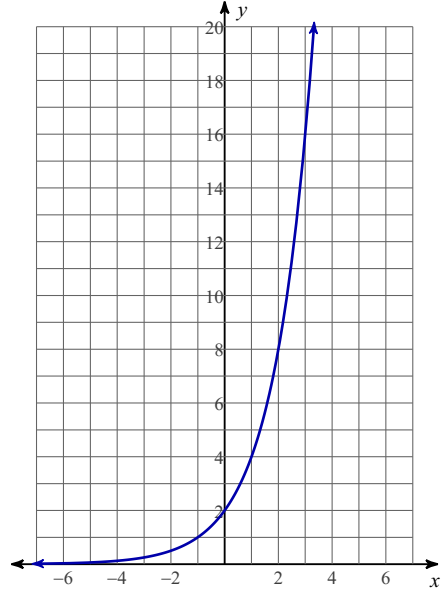


Write an equation for each graph.

11)



12)



13) A colony of bacteria has a population of 200. The colony then loses one-half of its population every hour for the next 5 hours.

a) Write an equation that models the **DECAY** of bacteria in the form  $y = ab^x$ .

b) How many bacteria remain after 4 hours?