

Exponential Decay

Period _____

Write the exponential equation for the relation shown in the table. If not exponential, state why.

1)

x	0	1	2	3	4
y	81	27	9	3	1

2)

x	-2	-1	0	1	2
y	96	48	24	12	6

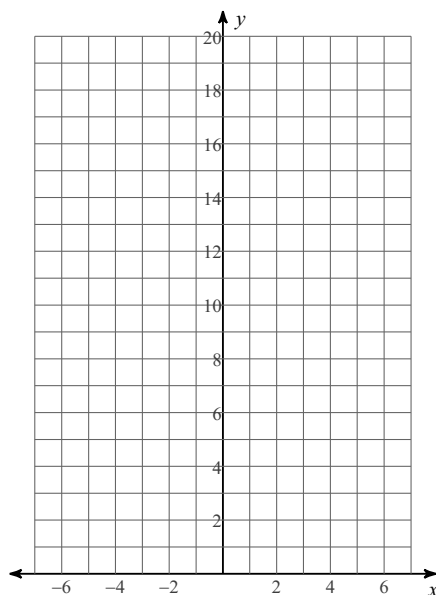
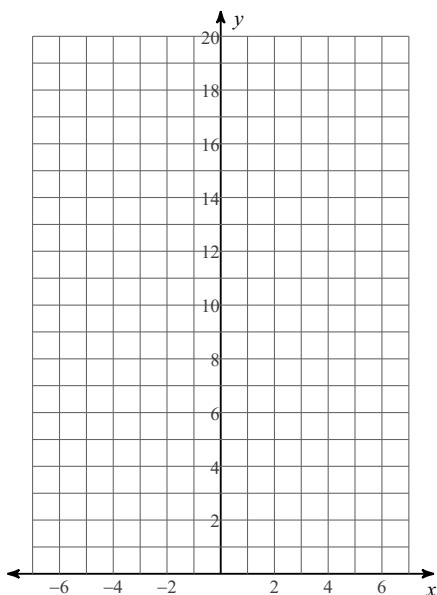
3)

x	0	1	2	3	4
y	8	6	4	2	0

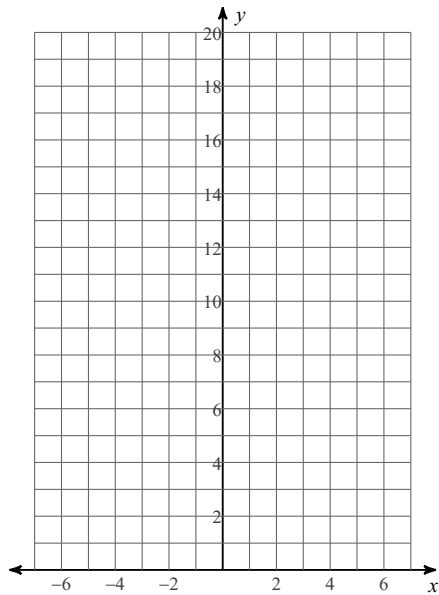
Sketch the graph of each function. Make a table first and SHOW YOUR TABLE!

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

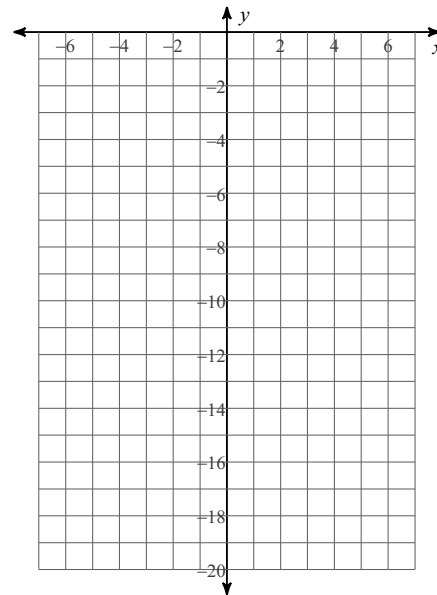
5) $y = 2 \cdot \left(\frac{1}{2}\right)^x$



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



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



8) Compare the graphs for 4 and 5. How are they similar. How are they different?

9) The number of grizzlies in a national park is declining, so a study was conducted in the year 2010. The number of grizzlies since 2010 can be modeled by the equation $y = 78 \cdot 0.95^t$.

a) Interpret what the y-int means in context.

b) Use the equation to estimate the number of grizzlies that should be expected in the year 2025 if nothing changes.

c) Use the equation to estimate the number of grizzlies in 1995.