

Exponential Growth

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 | 3 | 6 | 12 | 24 | 48 |

2)

| | | | | | |
|---|----|----|---|----|----|
| x | -2 | -1 | 0 | 1 | 2 |
| y | 1 | 3 | 9 | 27 | 81 |

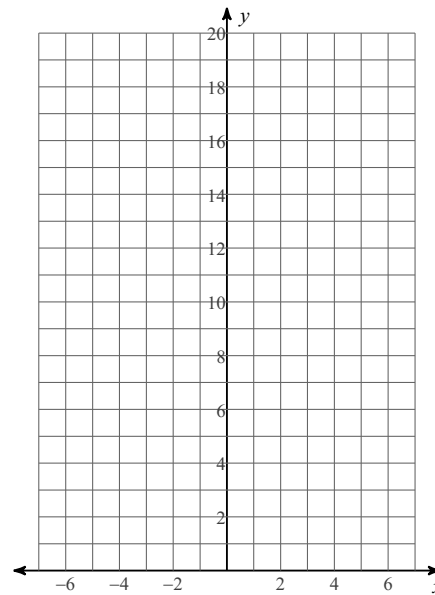
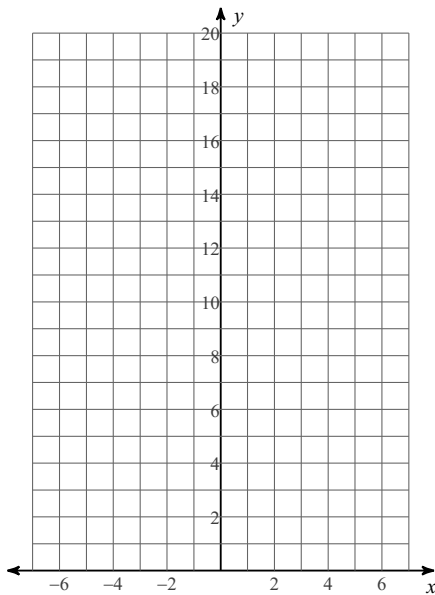
3)

| | | | | | |
|---|---|---|---|---|---|
| x | 0 | 1 | 2 | 3 | 4 |
| y | 1 | 3 | 5 | 7 | 9 |

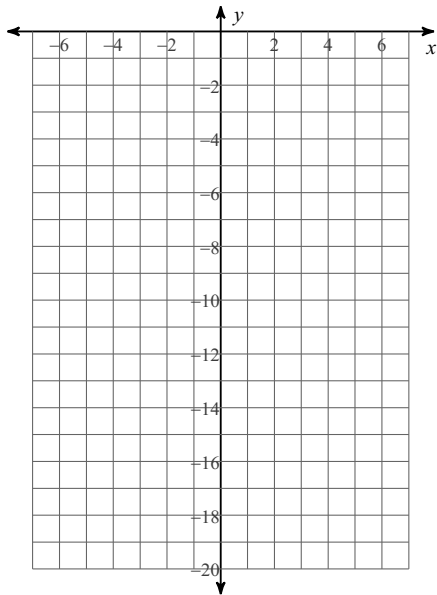
Sketch the graph of each function and state the domain and range. Make a table first and SHOW YOUR TABLE!

4) $y = 4 \cdot 2^x$

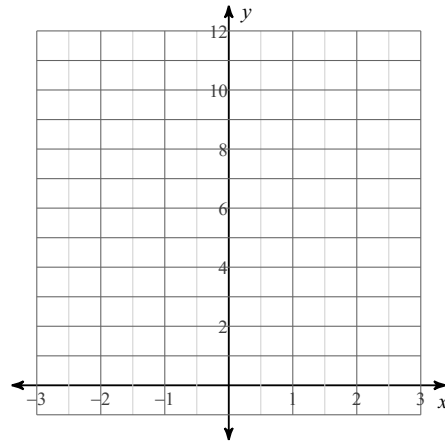
5) $y = 3^x$



6) $y = -4 \cdot 2^x$



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



8) Compare graphs for problems 4 and 6. How are they similar? How are they different?

9) The number of fish in a nearby lake since a study began in the year 2000 can be modeled by the equation $y = 12000 \cdot 1.03^t$.

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

b) Use the equation to estimate the number of fish that should be expected in the year 2025.

c) Use the equation to estimate the number of fish that were in the lake in 1990.