

### 8.1 Properties of Exponential Functions

Identify if the following equations yield exponential growth or exponential decay.

1)  $y = 5^x$

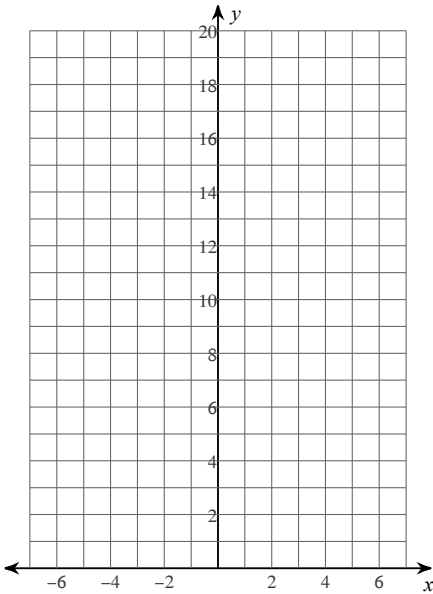
2)  $y = 3 \cdot \left(\frac{1}{5}\right)^x$

3)  $y = -2 \cdot \left(\frac{8}{9}\right)^x$

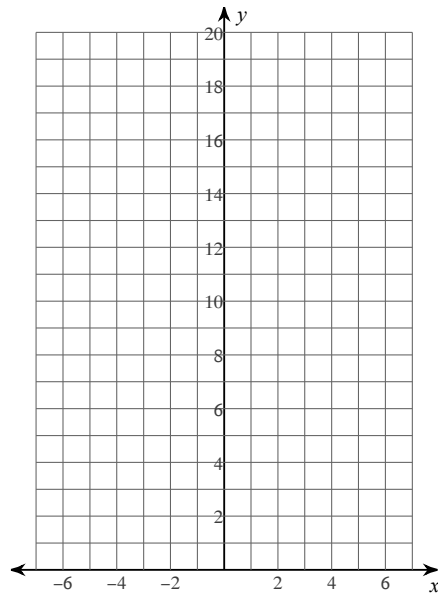
4)  $y = -8^x$

Sketch the graph of each function.

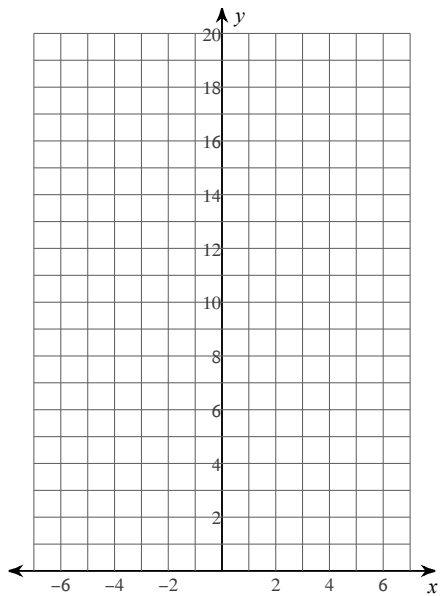
5)  $y = 3 \cdot 2^x$



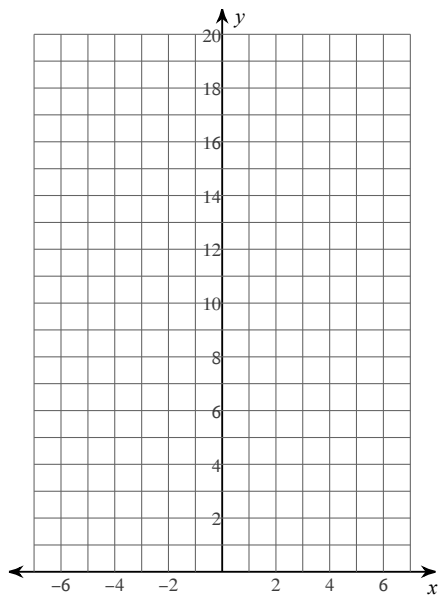
6)  $y = \frac{1}{3} \cdot \left(\frac{1}{4}\right)^x$



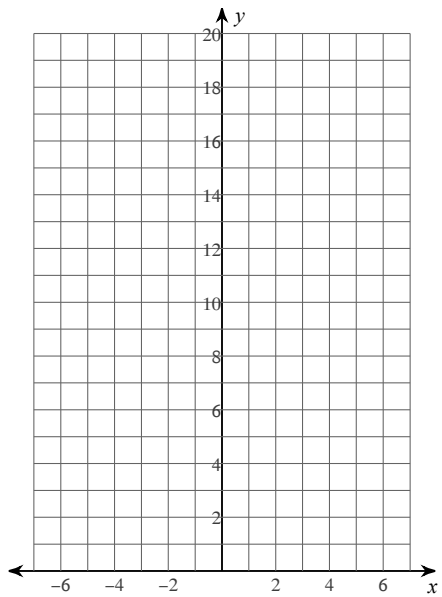
$$7) y = 4 \cdot \left(\frac{1}{2}\right)^x$$



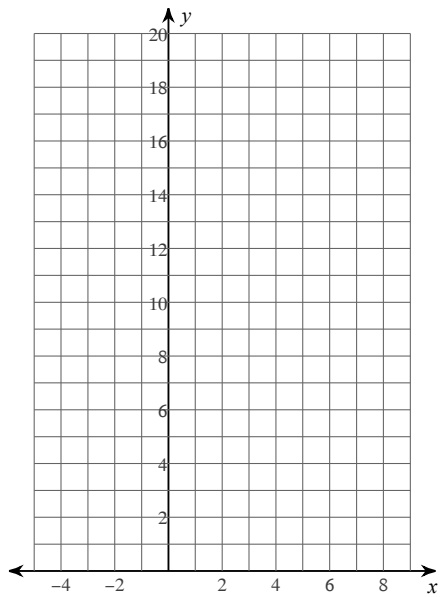
$$8) y = \frac{1}{2} \cdot 2^x$$



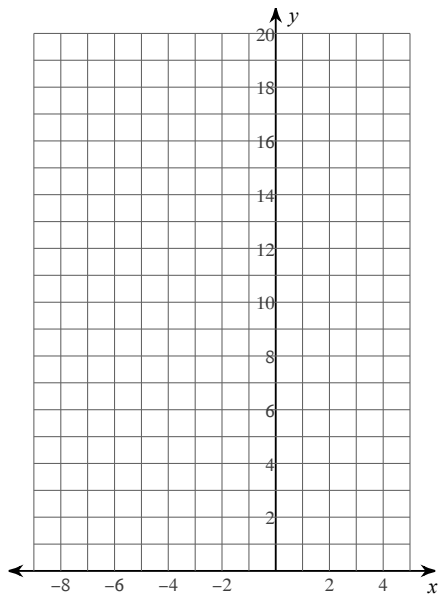
$$9) y = 2 \cdot 3^x$$



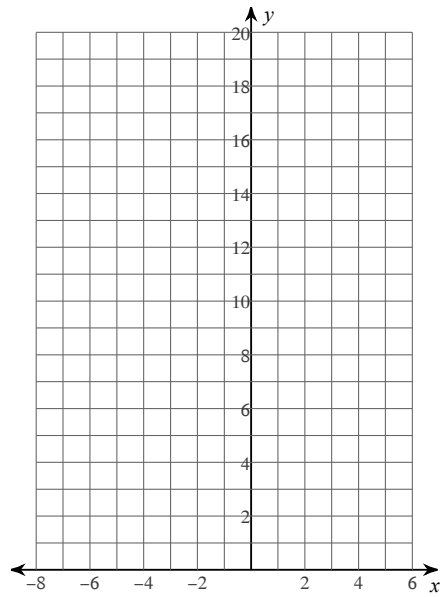
$$10) y = 5 \cdot 2^{x-2} + 1$$



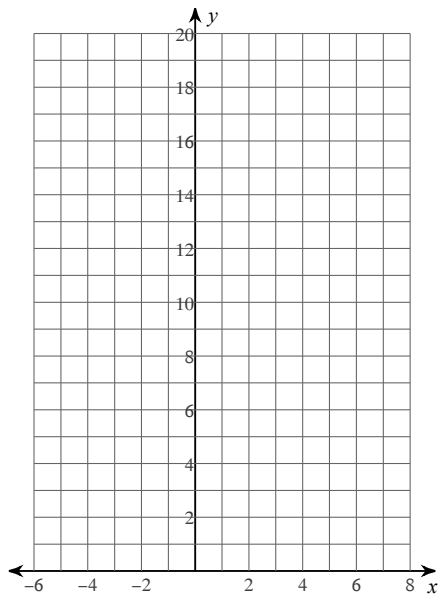
$$11) y = 2 \cdot \left(\frac{1}{2}\right)^{x+2} + 1$$



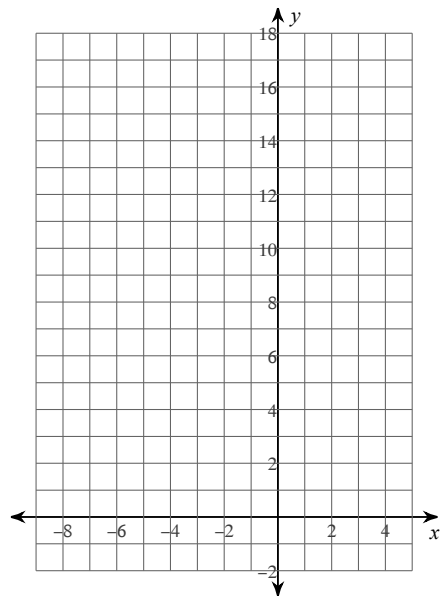
$$12) y = \frac{1}{3} \cdot 5^{x+1} + 1$$



$$13) y = 2 \cdot 2^{x-1} + 1$$

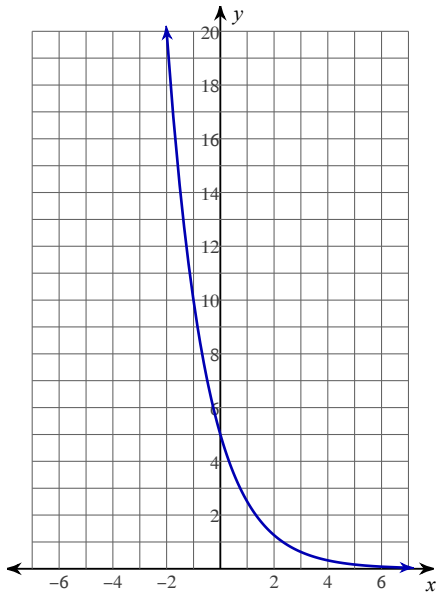


$$14) y = 2 \cdot 3^{x+2} - 2$$

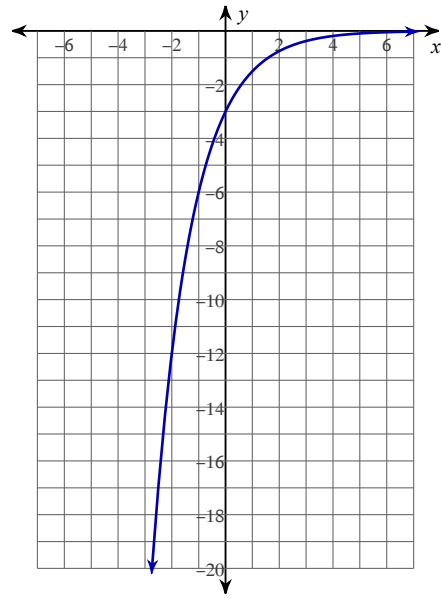


Write an equation for each graph.

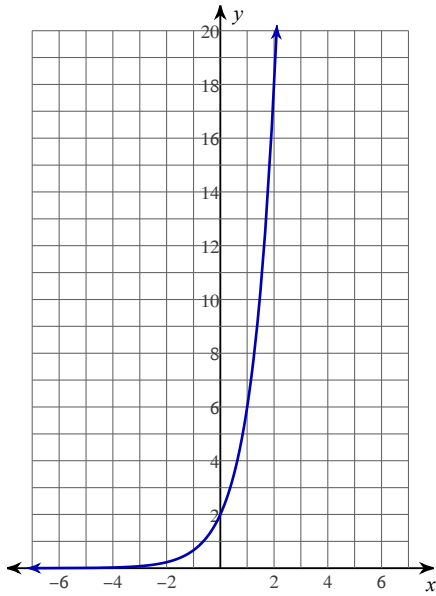
15)



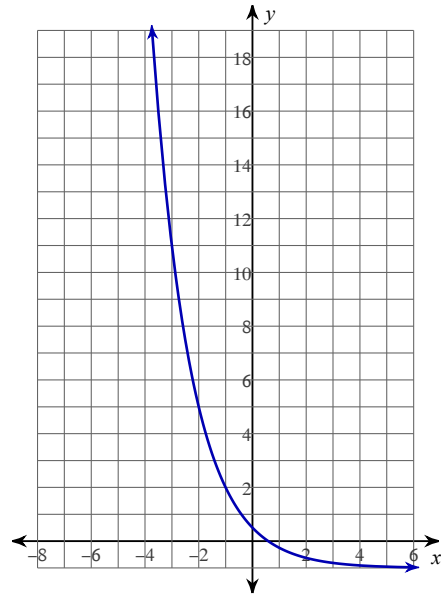
16)



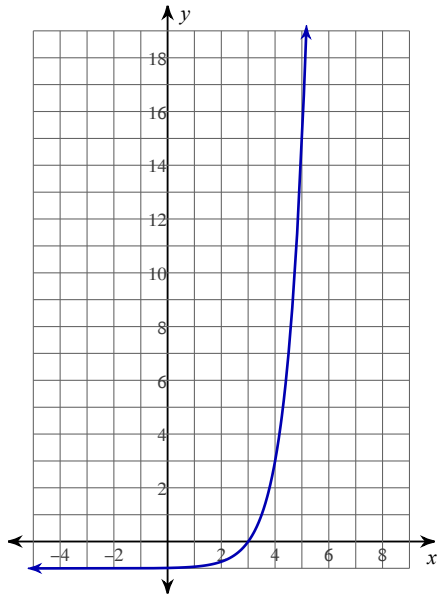
17)



18)



19)



20)

