

9-1 Practice

Form K

Exponential Functions

Determine whether each table represents a linear or an exponential function.

1.

x	1	2	3	4	5	6
y	2	4	8	16	32	64

2.

x	1	2	3	4	5	6
y	1	4	7	10	13	16

Determine whether each equation represents a linear or an exponential function.

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

4. $y = 4 \cdot 0.2^x$

5. $y = 5x - 8$

6. $y = 5 \cdot 1.07^x$

Evaluate each function for the given value.

7. $y = 4^x$ for $x = 3$

8. $f(x) = 2 \cdot 3^x$ for $x = 5$

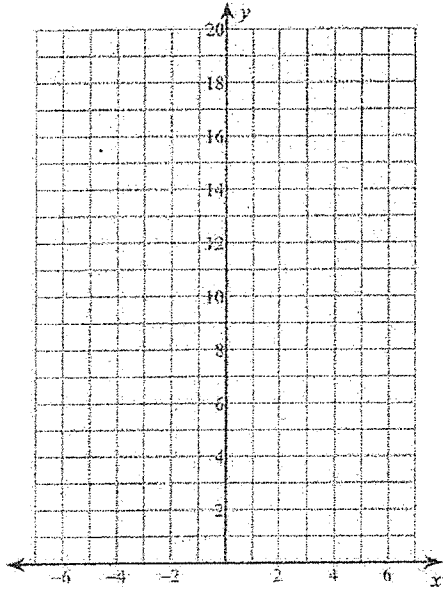
9. A \$2000 investment doubles in value every 5 years. The function $f(x) = 2000 \cdot 2^{\frac{x}{5}}$ represents the value of the investment after x years. How much will the investment be worth after 18 years?

10. The city library will be increasing the number of books it has to loan at a rate of 5% per year. The library currently has 40,000 books. The number of books they will have in any given year is modeled by the function $h(t) = 40,000 \cdot 1.05^t$, where t is the number of years. How many books will the library have 8 years from now?

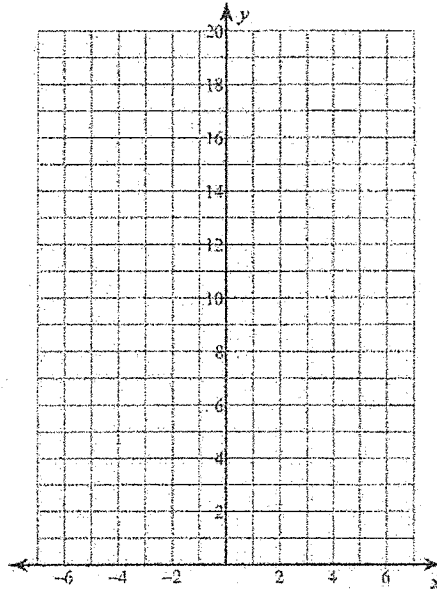
WS 7.3 Graphs of Exponential Growth and Decay

Provide a table of five points and then sketch the graph of each function. State whether it is growth or decay, the starting amount, and the growth/decay percentage rate.

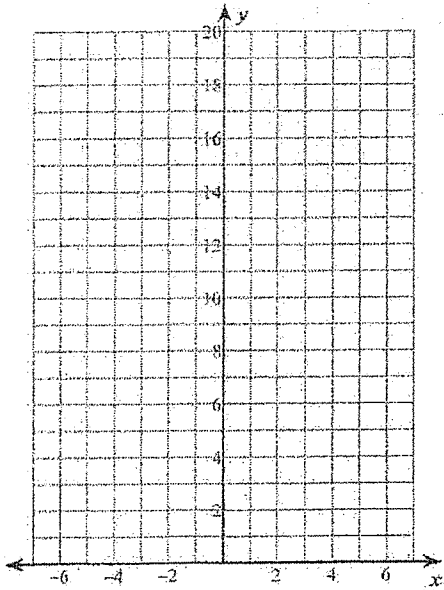
1) $y = \frac{1}{3} \cdot 4^x$



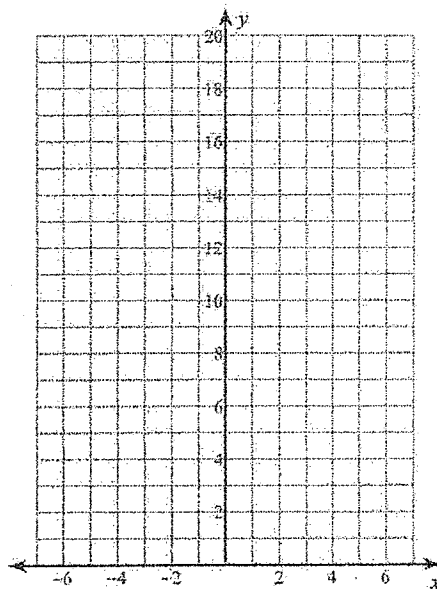
2) $y = 5 \cdot 2^x$



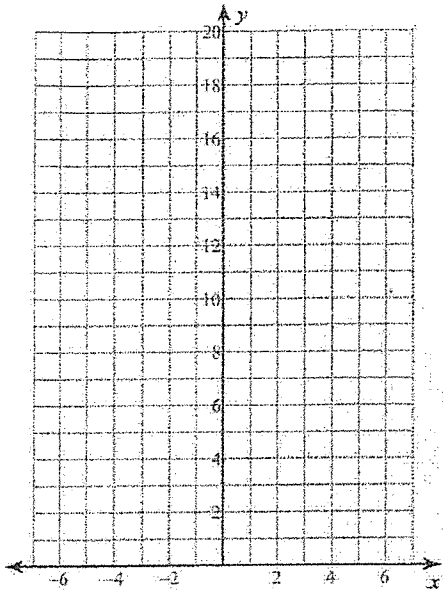
3) $y = 4 \cdot 2^x$



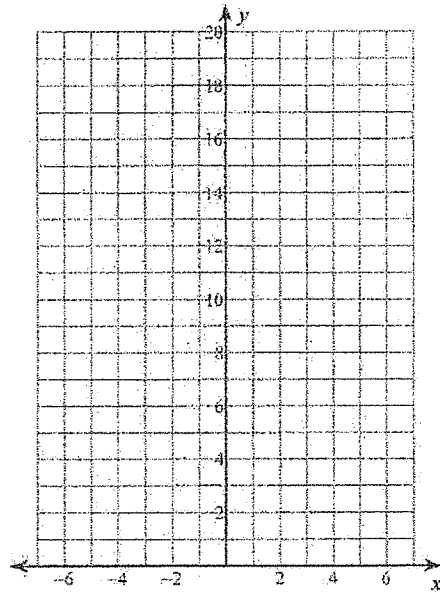
4) $y = \frac{1}{4} \cdot 4^x$



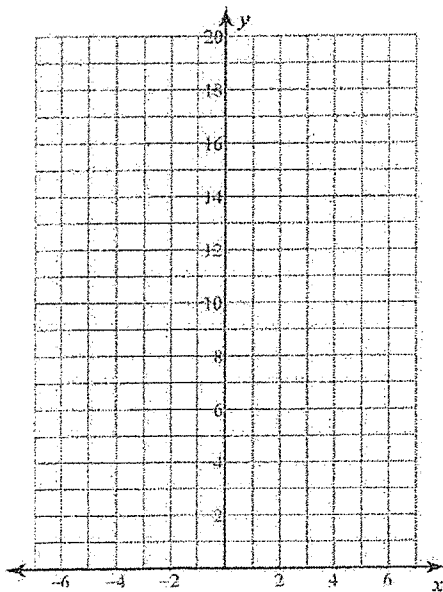
$$5) y = \frac{1}{2} \cdot 5^x$$



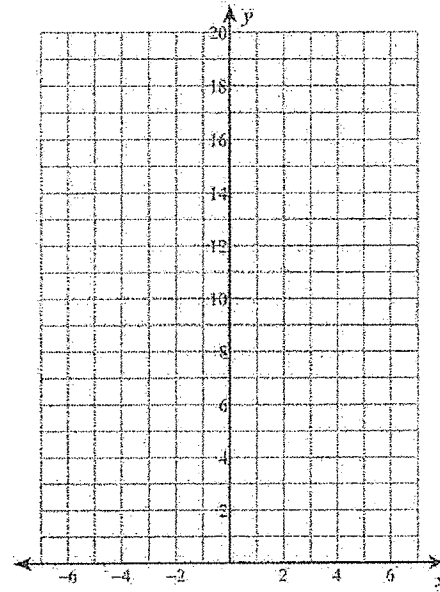
$$6) y = \frac{1}{4} \cdot 6^x$$



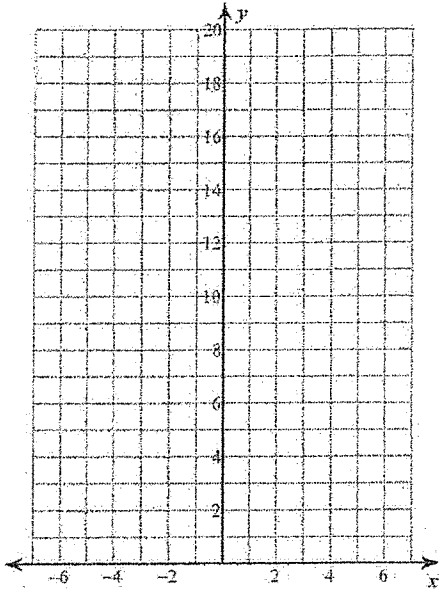
$$7) y = \frac{1}{2} \cdot \left(\frac{1}{6}\right)^x$$



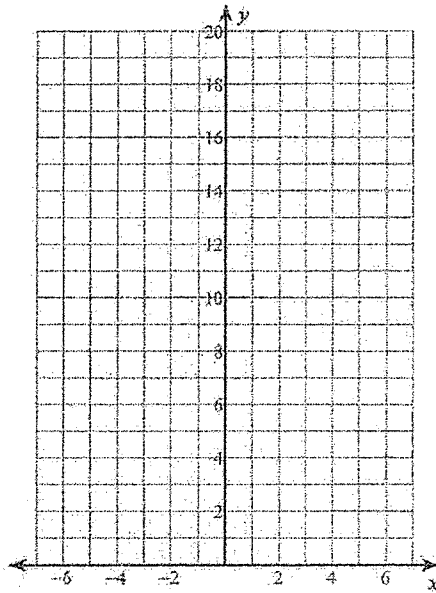
$$8) y = 4 \cdot \left(\frac{1}{2}\right)^x$$



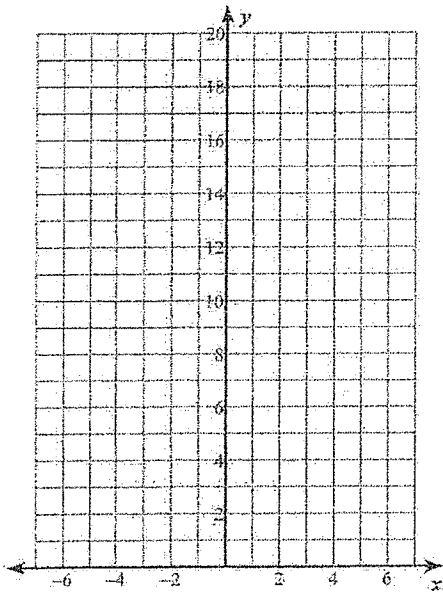
$$9) y = \frac{1}{2} \cdot \left(\frac{1}{2}\right)^x$$



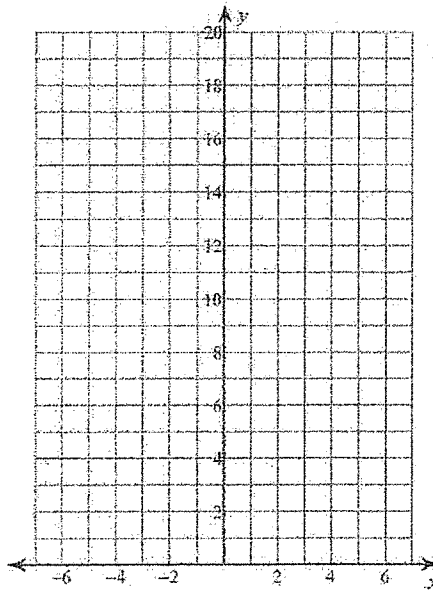
$$10) y = 3 \cdot 2^x$$



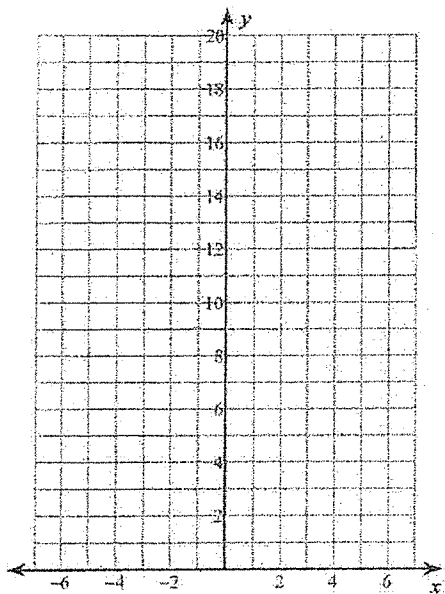
$$11) y = \frac{1}{3} \cdot 4^x$$



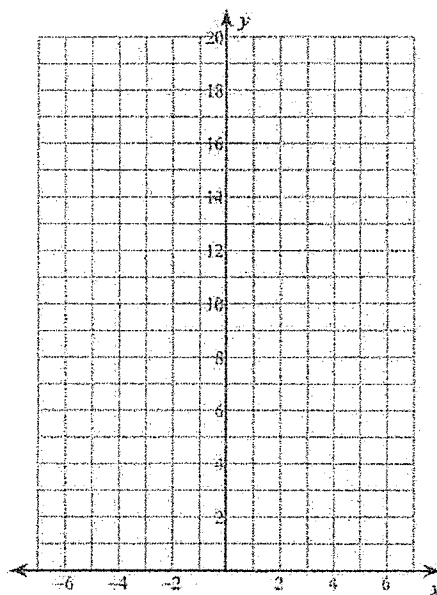
$$12) y = 3 \cdot \left(\frac{1}{2}\right)^x$$



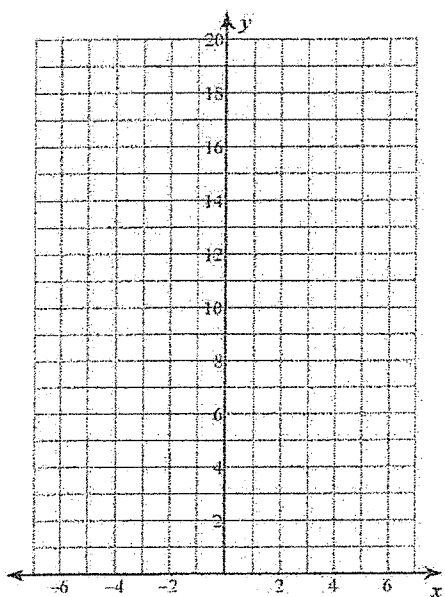
$$13) y = \frac{1}{2} \cdot 5^x$$



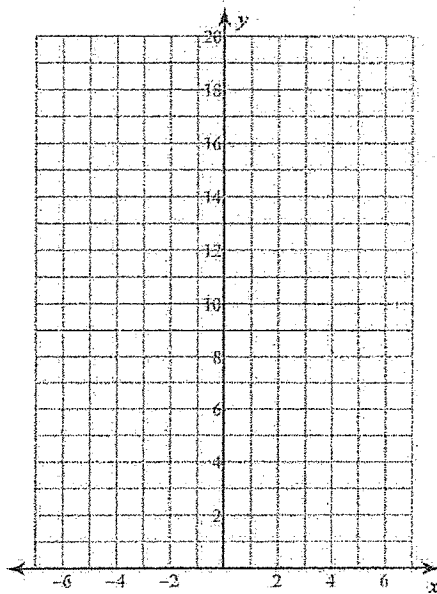
$$14) y = 2 \cdot 2^x$$



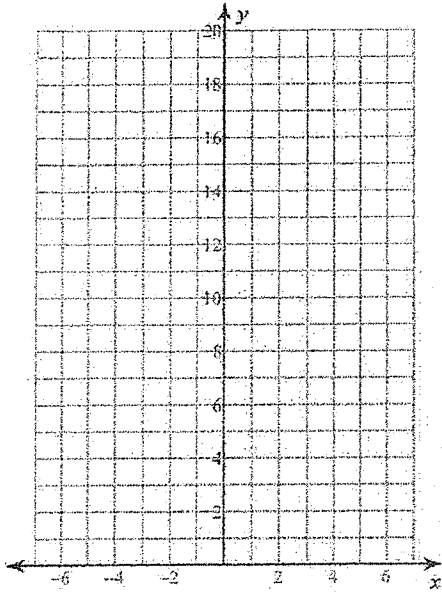
$$15) y = \frac{1}{2} \cdot \left(\frac{1}{5}\right)^x$$



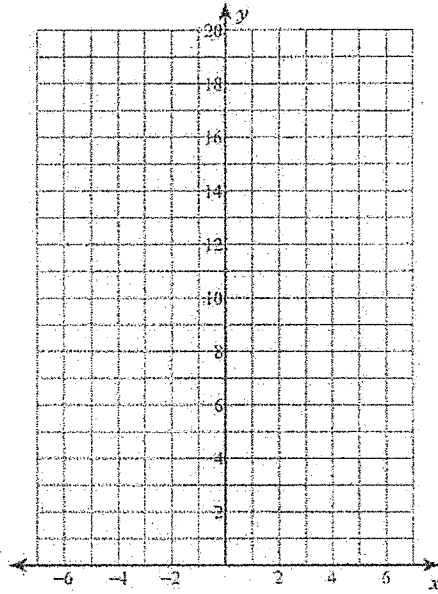
$$16) y = \frac{1}{3} \cdot 7^x$$



$$17) y = 5 \cdot \left(\frac{1}{2}\right)^x$$

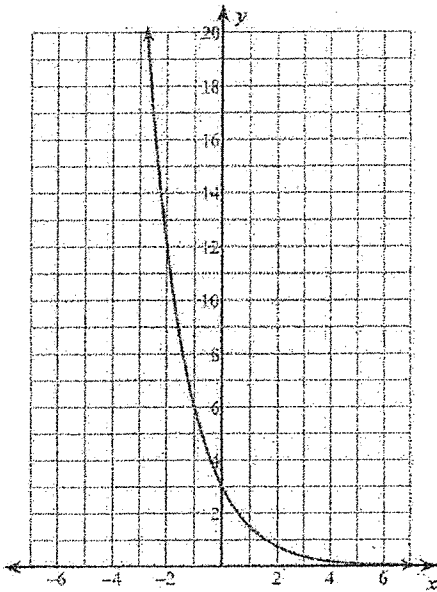


$$18) y = \frac{1}{4} \cdot 5^x$$



Write an equation for each graph.

19)



20)

