Secondary 3   Name_____

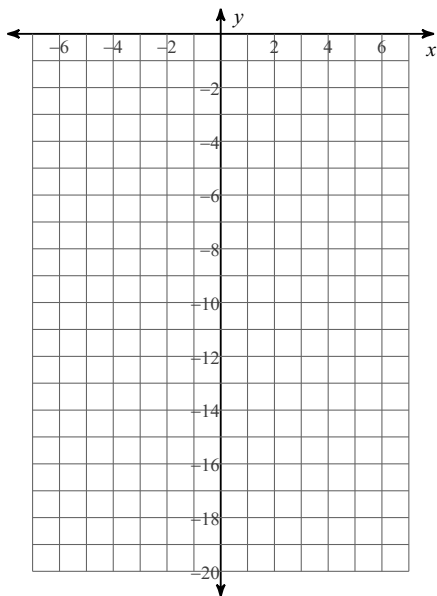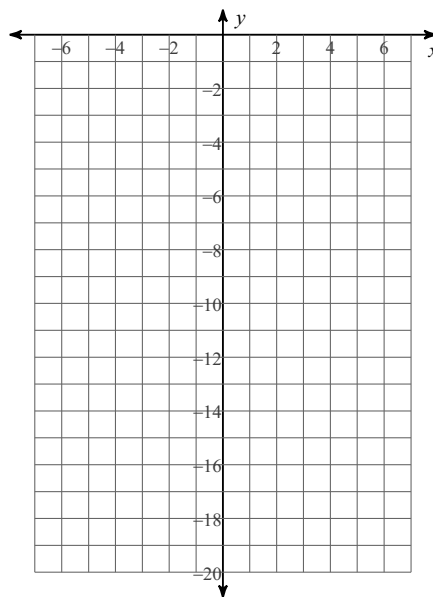## 8-2 Classwork   Date_____ Period_____

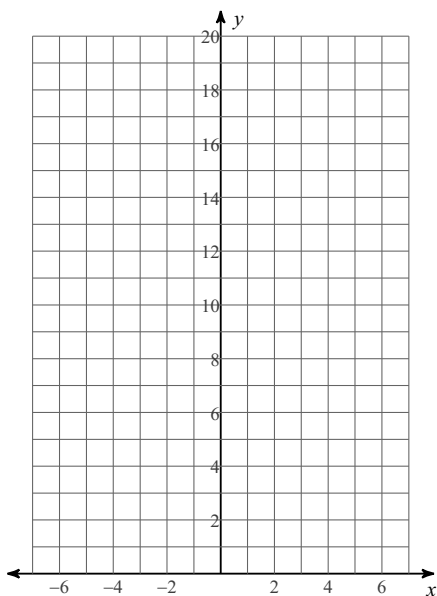**Sketch the graph of each function.**

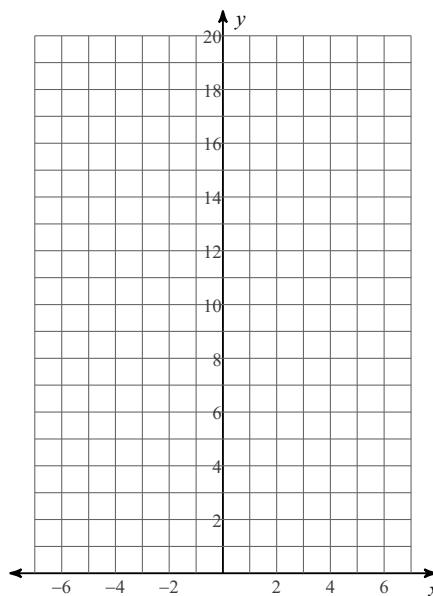1) $y = -4 \cdot \left(\dfrac{1}{2}\right)^x$

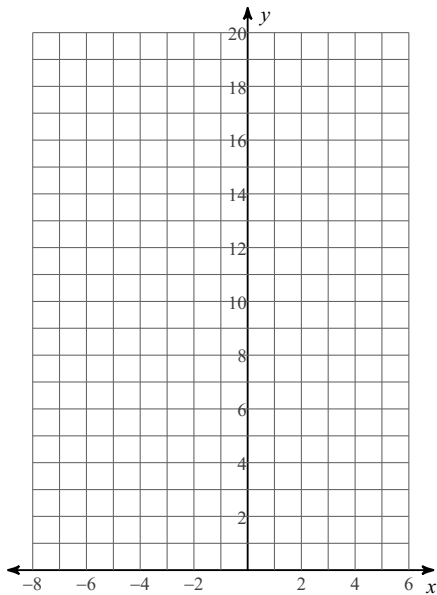2) $y = -\dfrac{1}{2} \cdot 2^x$

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

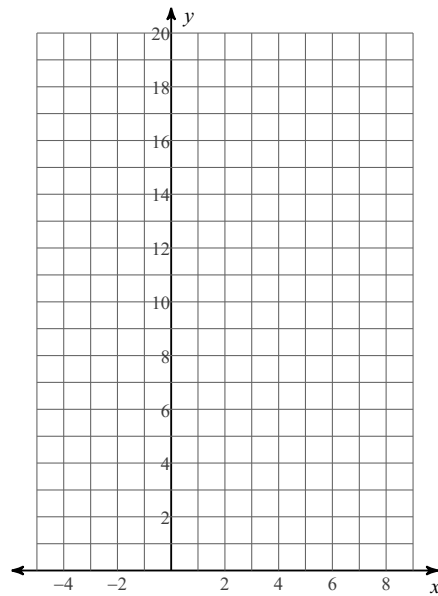4) $y = 4 \cdot \left(\dfrac{1}{2}\right)^x$

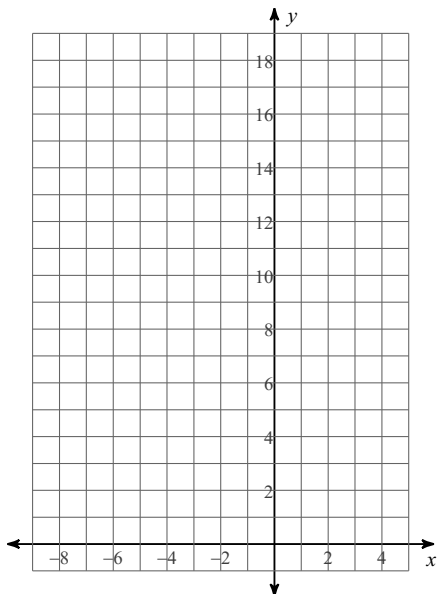**Graph each function as a transformation of its parent function.**

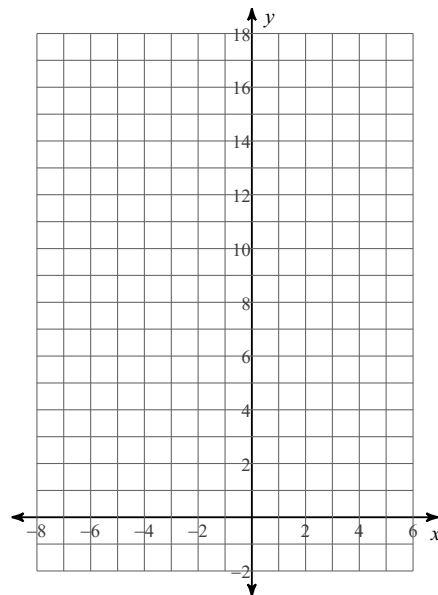5) $y = 4 \cdot \left(\dfrac{1}{2}\right)^{x+1} + 1$

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

7) $y = \dfrac{1}{3} \cdot 6^{x+2} - 1$

8) $y = 2 \cdot \left(\dfrac{1}{3}\right)^{x+1} - 2$

9) The function $P = 1200 \cdot 1.4^{d}$ models the number of deer in a region after d decades. What exponential function models the number of deer after t years? What is the annual growth rate of the number of deer?

10) The function $V = 250 \cdot 1.28^{d}$ models the value of a rare painting, in thousands of dollars, d decades after it sold at an auction for $250,000. What exponential function models the value of the painting after t years? What is the annual growth rate of the painting's value?

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Use the graph of $y = e^x$ to evaluate each expression to 4 decimal places.

11) e^6

12) e^e

Find the amount in a continuously compounded account for the given conditions.

13) principal: $2000
   annual interest rate: 5.1%
   time: 3 years

14) principal: $400
   annual interest rate: 7.6%
   time: 1.5 years

15) A student wants to save $8000 for college in 5 years. How much should be put into an account that pays 5.2% annual interest compounded continuously?

16) How long would it take to double your principal in an account that pays 6.5% annual interest compounded continuously?