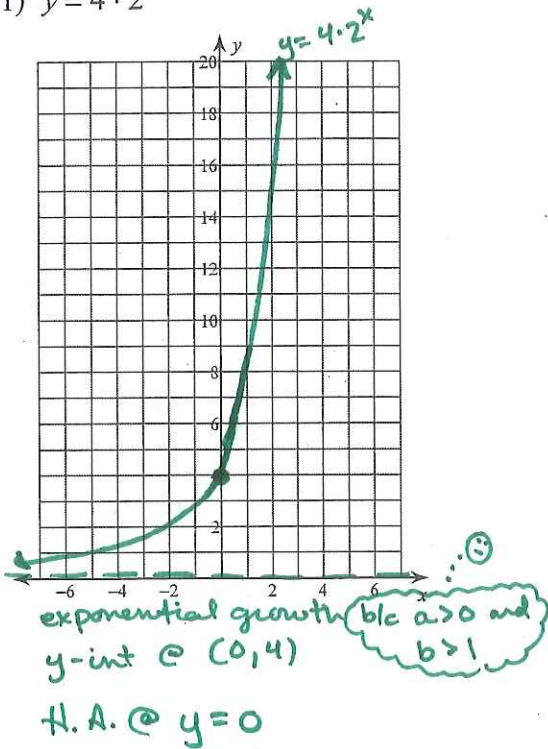


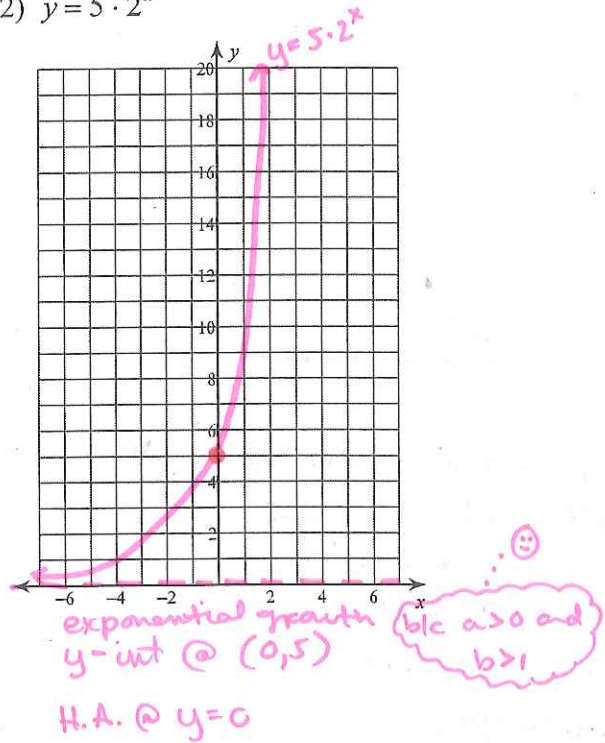
Graphing Exponential Functions

Sketch the graph of each function.

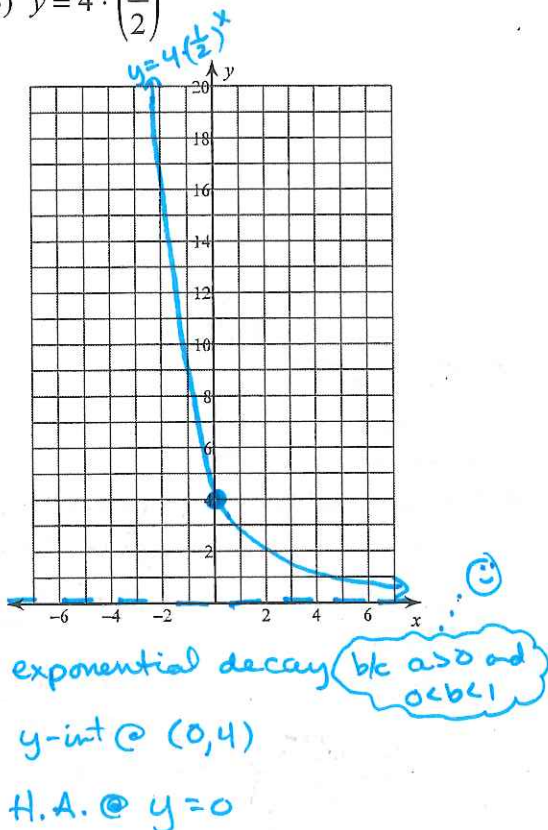
1) $y = 4 \cdot 2^x$



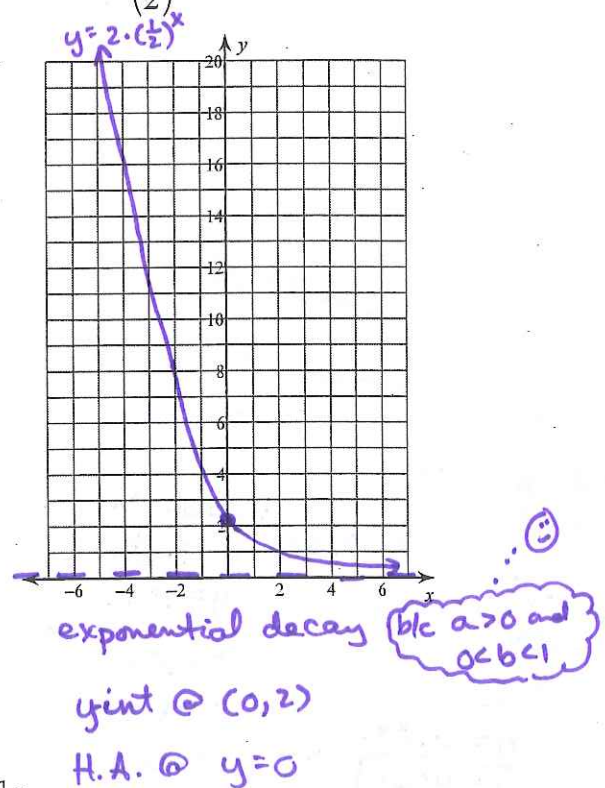
2) $y = 5 \cdot 2^x$



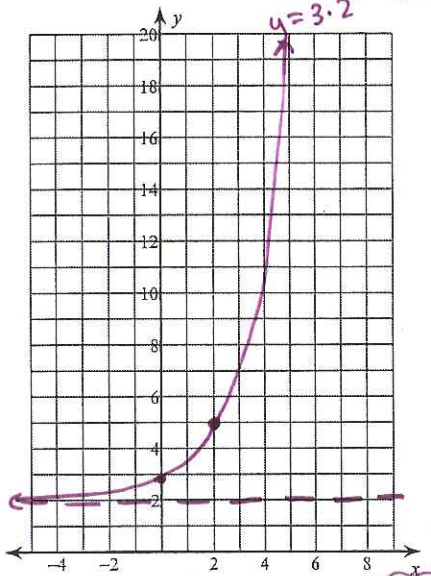
3) $y = 4 \cdot \left(\frac{1}{2}\right)^x$



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



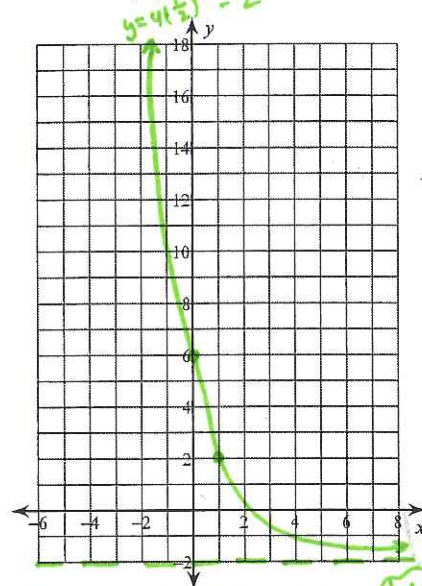
5) $y = 3 \cdot 2^{x-2} + 2$



exponential growth (b/c $a > 0$ and $b > 1$)
 shifted right 2 units,
 up 2 units
 key pt $\rightarrow (2, 5)$
 y-int @ $(0, 2.75)$
 H.A. @ $y = 2$

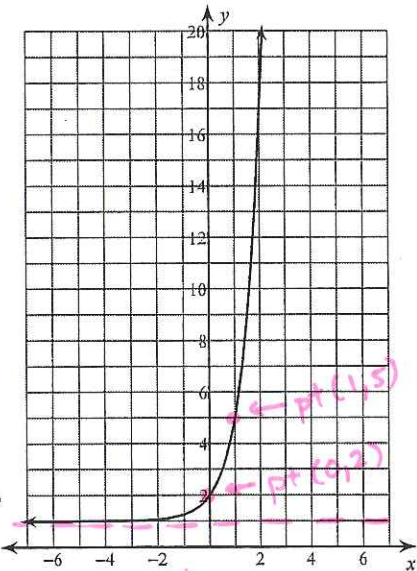
Write an equation for each graph.

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



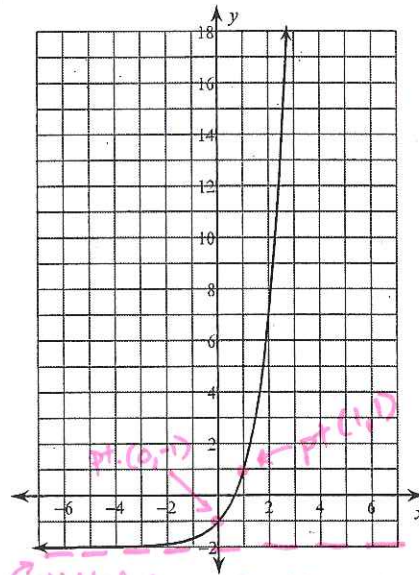
exponential decay (b/c $a > 0$ and $0 < b < 1$)
 shifted right 1 unit,
 down 2 units
 key pt $\rightarrow (1, 2)$
 y-int @ $(0, 6)$
 H.A. @ $y = -2$

7)



shifted up 1 unit
 $y = a \cdot b^x + 1$
 use $(0, 2)$
 $2 = a \cdot b^0 + 1$
 $2 = a + 1$
 $1 = a$
 $y = a \cdot b^x + 1$
 $y = 1 \cdot b^x + 1$
 $y = b^x + 1$
 use $(1, 5)$
 $5 = b^1 + 1$
 $5 = b + 1$
 $4 = b$
 $y = a \cdot b^x + 1$
 $y = 4^x + 1$

8)



shifted down 2 units
 $y = a \cdot b^x - 2$
 use $(0, -1)$
 $-1 = a \cdot b^0 - 2$
 $-1 = a - 2$
 $1 = a$
 $y = a \cdot b^x - 2$
 $y = 1 \cdot b^x - 2$
 $y = b^x - 2$
 use $(1, 1)$
 $1 = b^1 - 2$
 $1 = b - 2$
 $3 = b$
 $y = a \cdot b^x - 2$
 $y = 3^x - 2$