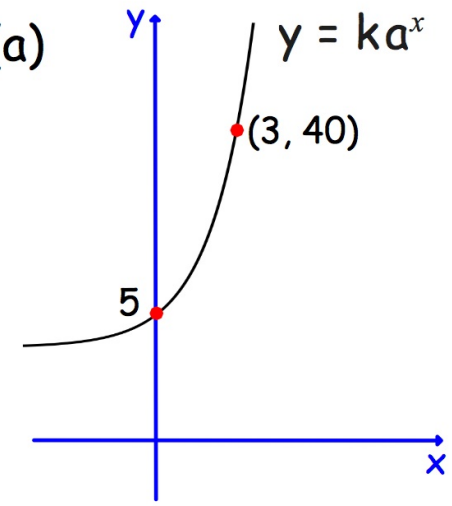
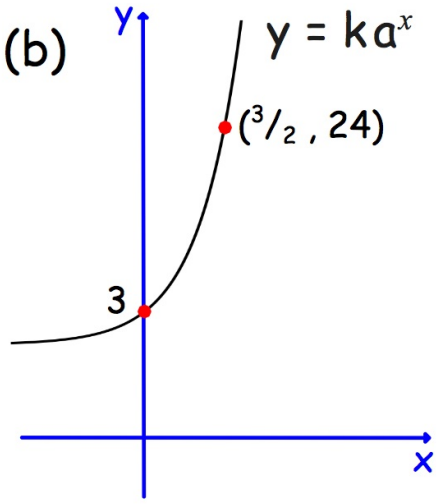
LOG. and EXPONENTIAL GRAPHS

(1) Find k and a

(a)

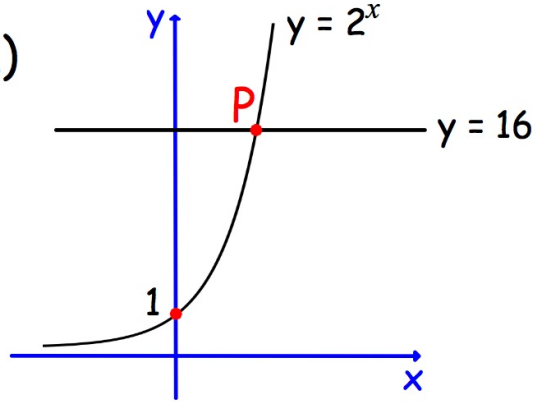


(b)

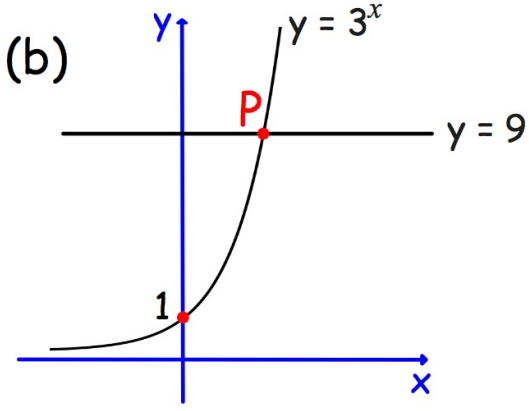


(2) Find the coordinates of the point of intersection P.

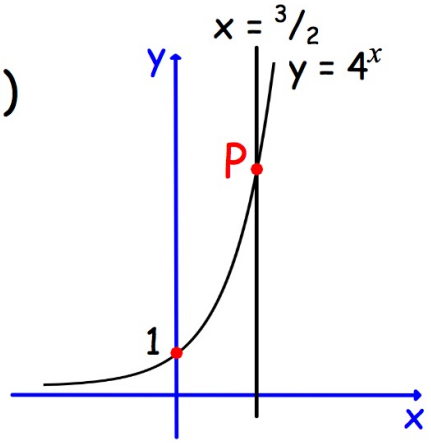
(a)



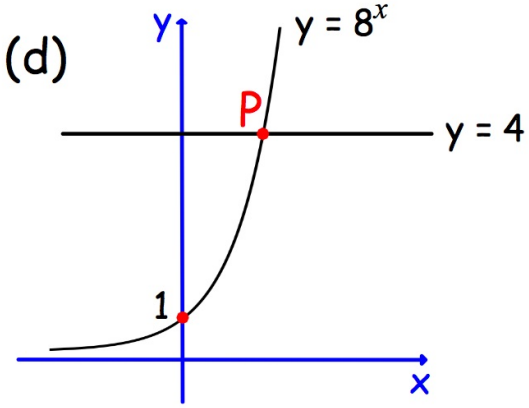
(b)



(c)

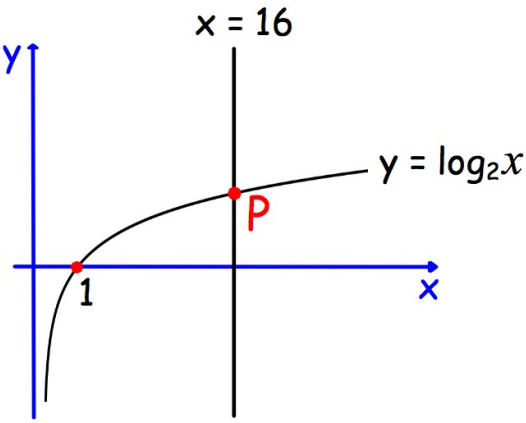


(d)

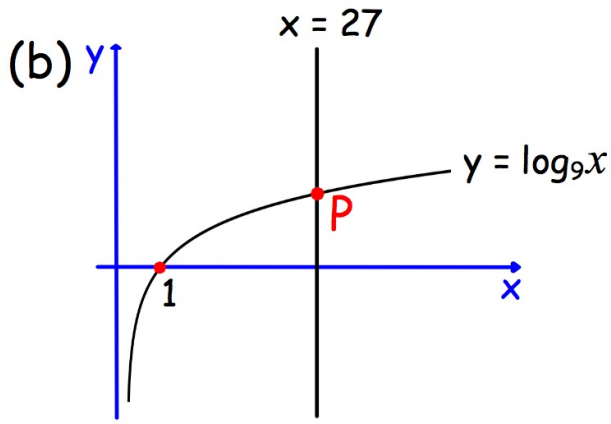


(3) Find the coordinates of the point of intersection P.

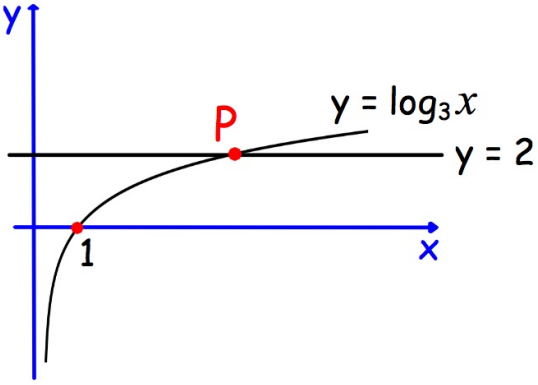
(a)



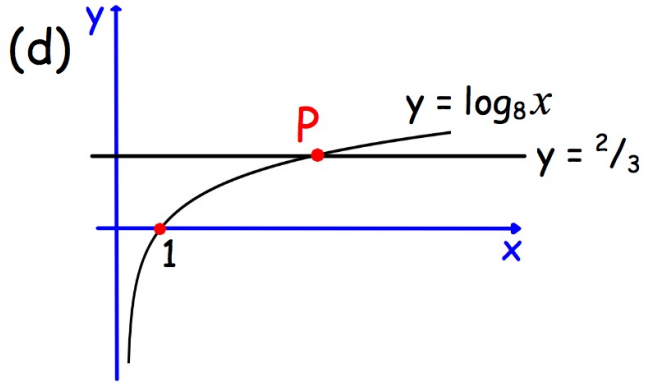
(b)



(c)

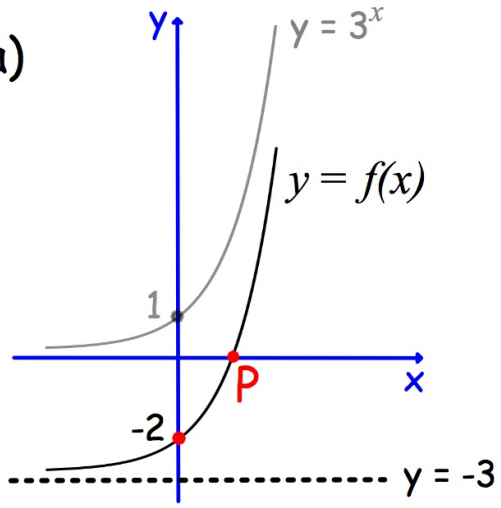


(d)

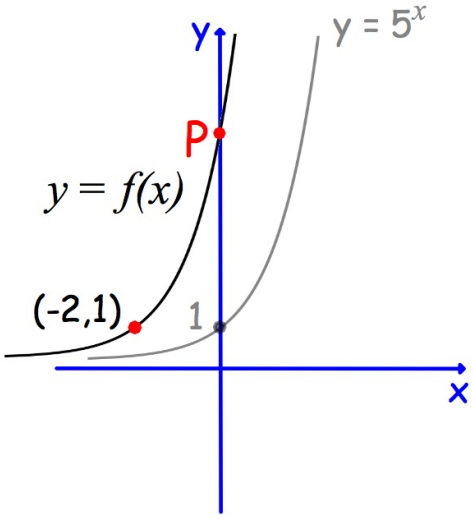


(4) Write (i) the equation of the graph.
(ii) the coordinates of point P.

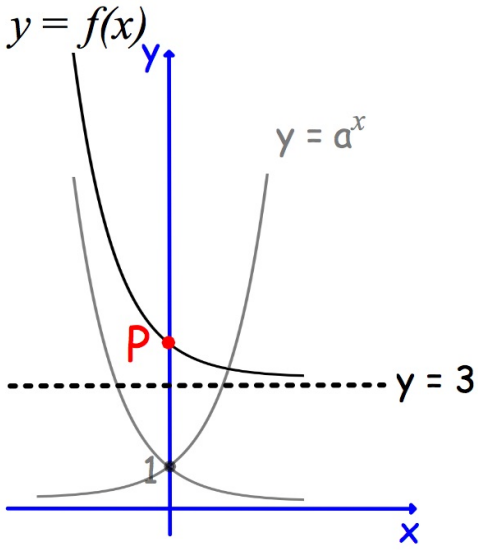
(a)



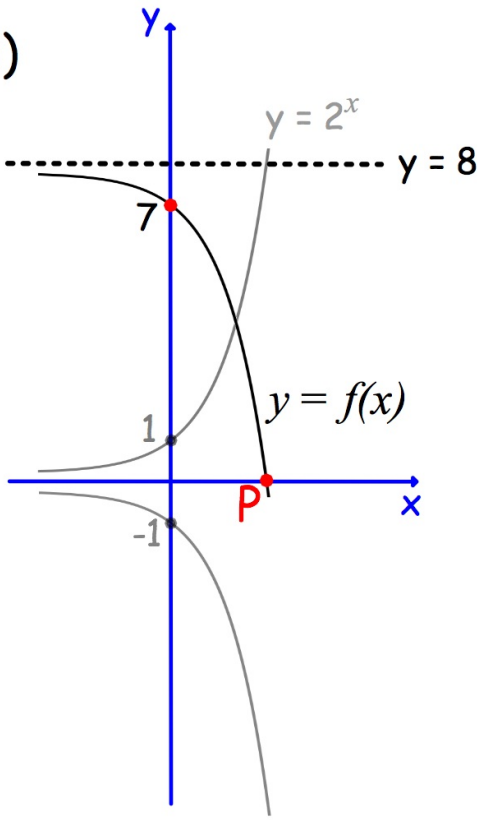
(b)



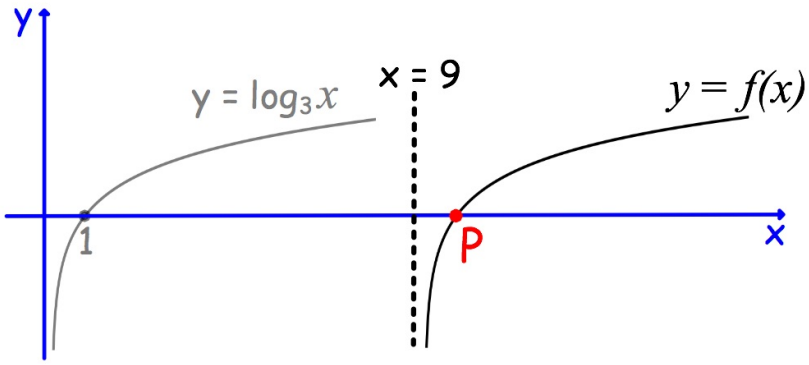
(c)


y = f(x)
y
y = a^x
P
y = 3
1
x

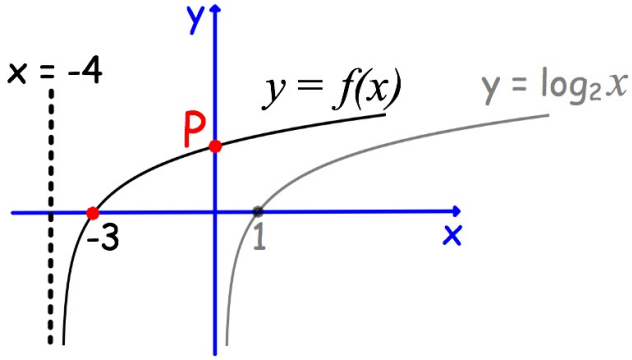
(d)


y
y = 2^x
y = 8
7
y = f(x)
1
P
x
-1

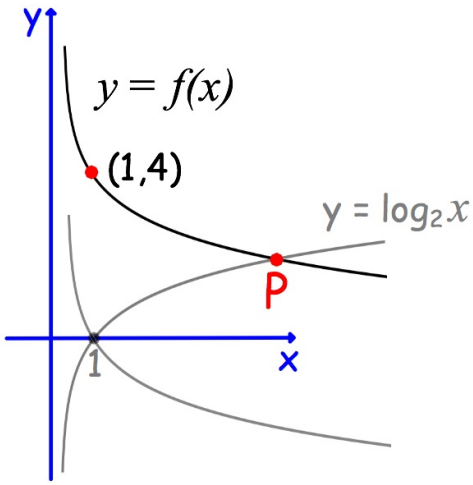
(e)


y
y = log₃x
x = 9
y = f(x)
1
P
x

(f)

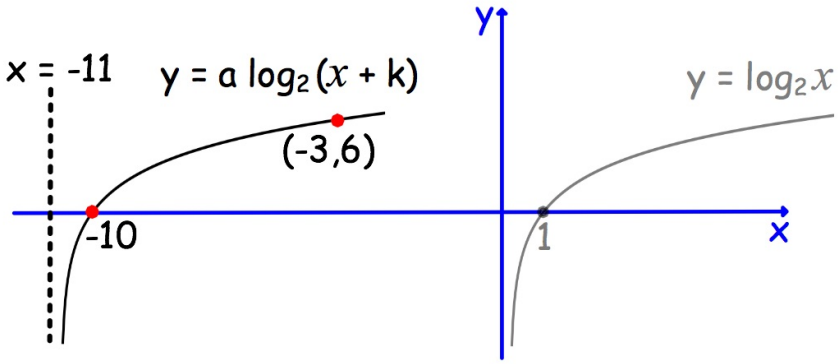

y
x = -4
y = f(x)
y = log₂x
P
-3
1
x

(g)

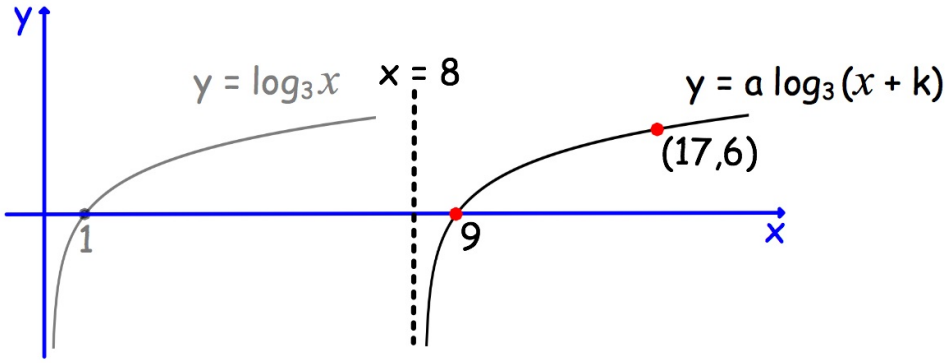

y
y = f(x)
(1,4)
y = log₂x
P
1
x

(5) Find k and a

(a)



(b)



(6) Sketch the graph, showing where it meets the x-axis and the image of the point (1,0)

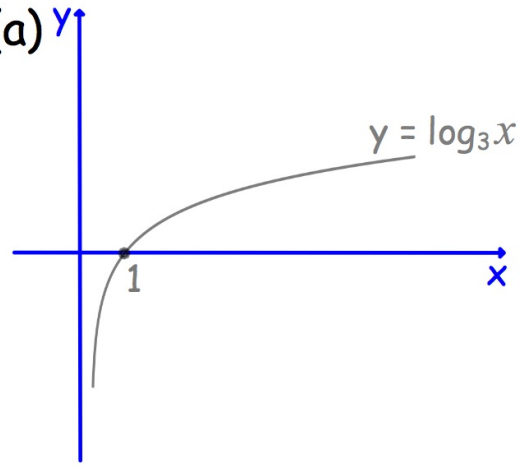
(a) $y = \log_3(9x)$

(b) $y = \log_2(\frac{1}{4}x)$

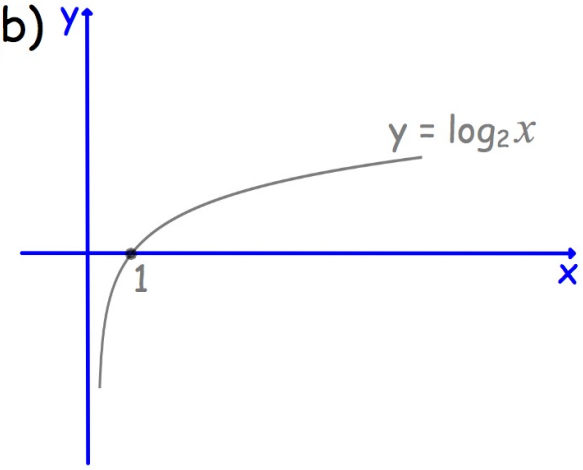
(c) $y = \log_3(\frac{9}{x})$

(d) $y = \log_2(\frac{1}{4x})$

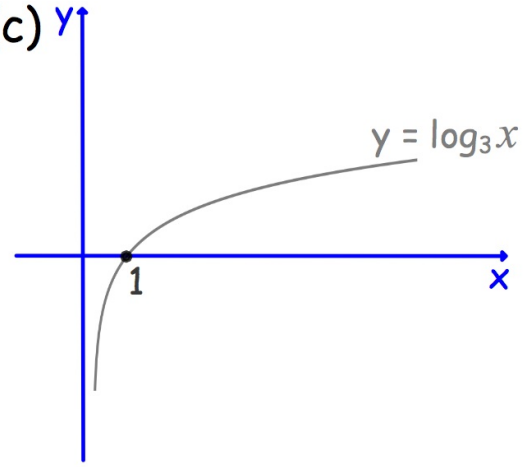
(6)(a)


y
y = log3x
1
x

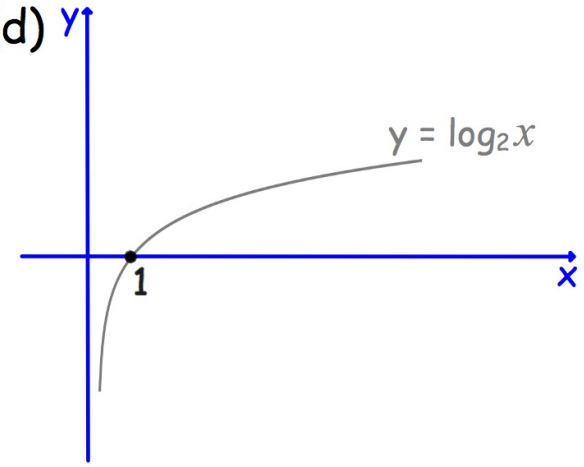
(b)


y
y = log2x
1
x

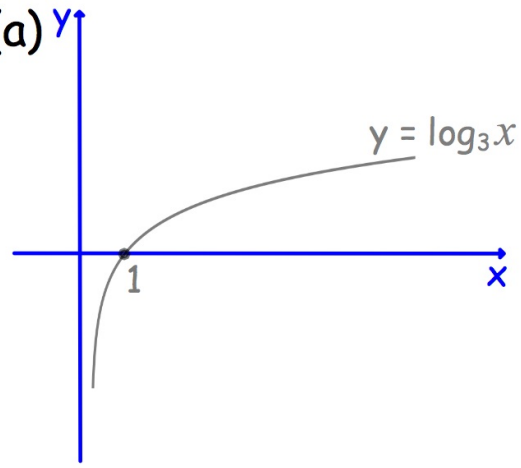
(c)


y
y = log3x
1
x

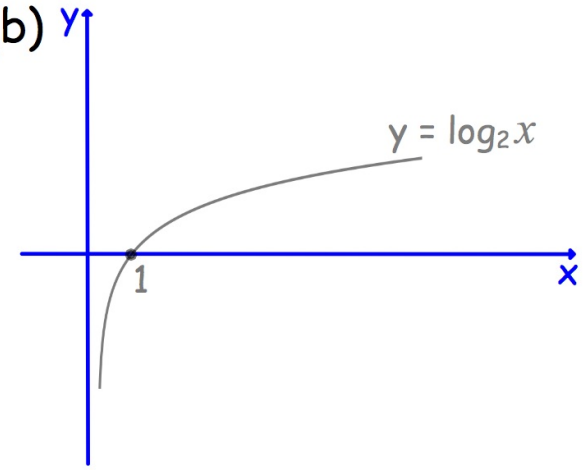
(d)


y
y = log2x
1
x

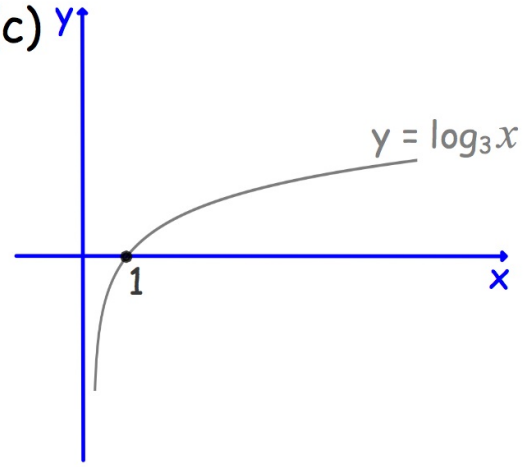
(6)(a)


y
y = log3x
1
x

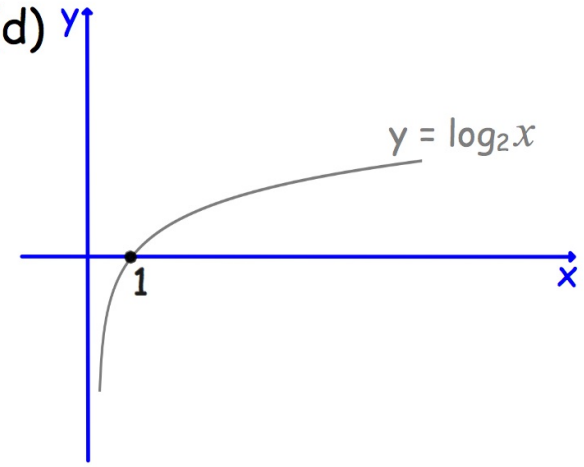
(b)


y
y = log2x
1
x

(c)


y
y = log3x
1
x

(d)


y
y = log2x
1
x

ANSWERS

(1) (a) $y = 5 \times 2^x$ (b) $y = 3 \times 4^x$

(2) (a) P(4,16) (b) P(2,9) (c) P($^3/_2$,8) (d) P($^2/_3$,4)

(3) (a) P(16,4) (b) P(27,$^3/_2$) (c) P(9,2) (d) P(4,$^2/_3$)

(4) (a) $y = 3^x - 3$ P(1,0) (b) $y = 5^{(x+2)}$ P(0,25)

(c) $y = a^{-x} + 3$ P(0,4) (d) $y = 8 - 2^x$ P(3,0)

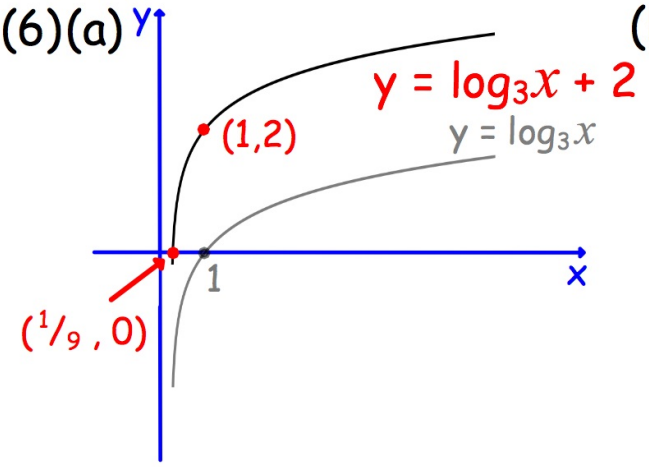
(e) $y = \log_3(x - 9)$ P(10,0)

(f) $y = \log_2(x + 4)$ P(0,2)

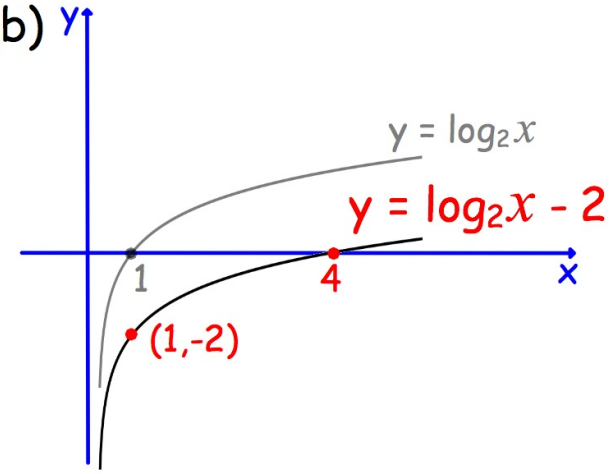
(g) $y = 4 - \log_2 x$ P(4,2)

(5) (a) a = 2 , k = 11 (b) a = 3 , k = -8

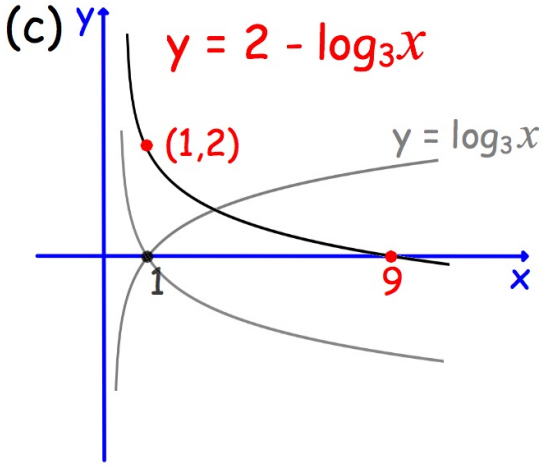
(6)(a)



(b)



(c)



(d)