

y = 1 - Cy c^{a-b}

b.c = -r/c

f(0) = r → 1 - y c^{-b} = r → y c^{-b} = 1 - r → -b = 1/c

(1, 7, 5)

e^{-1/c} = -r/c

f(1, a) = 0 → 1 - y^{-1/a} c^{-b} = 0 → y c^{-b} = 1 → -1/a - b = c

c - 1/c + r/c = 0

c^2 + r/c - 1 = 0 → c^{1/r} b^{-r} x^{-r} → -1/a + r = 1/c → a = 1 ✓



(1 + 1/y)^{-r} = (y/y)^{-r} = (y/c)^r = r/c (a+c)b = -3

y = 1 + C x r^{a+bx}

f(1, 2) = 0 → 1 + C x r^{a+b} = 0 → r^{a+b} = -1/C

تقسیم

r^b = r

(2)

f(0) = r/c → 1 + C x r^a = r/c → r^a = (r/c - 1)/C

b = 1 ✓



f(-1) = ? 1 + C x r^{a-1} = 1 + (C x r^a)/r = 1 + (r/c - 1)/r = 1/r ✓

y = C + log_a^{a+bx}

f(0) = r → C + log_a^b = r → a^{r-C} = b

تقسیم

r a = b / (r a + b)

(2)

f(1, r) = 0 → C + log_a^{r+1} = 0 → a^{-C} = r a + b

r a b + r a a = b

r a a = -r a b

a/b = -r a / r a = -r/a ✓



a/b = ? -r/a

f(x) = log_a^{(r^x - 1) - a}

|a^r - 1 - a| > 0 u ≤ 1 ✓

(2)

u > 0 { a^u < r^r → r - a^r - u > 0 → -r < u < 1 }
r^r < a^u → a^r - u - r > 0 → a - 1 < u < r

u ≤ 0 ∪ (a < 1 ∪ u > r)

D_f = ? IR - [1, r] ✓

f(x) = r + r^{b-a}

f(1) = r + r^{b-a} = r → r^{b-a} = 0 → b-a = 1 { b=r, b+a=r, a=1 ✓

(2)

g(x) = -x^2 - c x + 1

g(1) = f

بزرگترین

f'(1) = -1 → f(-1) = 1 → r + r^{b+a} = 1 → r^{b+a} = 1 - r = a - b + a r

r^{b-a} = ? (r) - 1 = r ✓

$$f(n) = -2 + \left(\frac{1}{2}\right)^n$$

$$g(n) = n^2 - n$$

(2)

برای پیدا کردن $f(1)$ و $f(2)$ $g(1) = 0 \rightarrow f(1) = -2 + \left(\frac{1}{2}\right)^{A+B} = 0 \rightarrow \left(\frac{1}{2}\right)^{A+B} = 2 \rightarrow A+B = -1$

$g(2) = 2 \rightarrow f(2) = -2 + \left(\frac{1}{2}\right)^{A+B} = 2 \rightarrow \left(\frac{1}{2}\right)^{A+B} = 4 \rightarrow A+B = -2$

$A = -1$
 $B = 0$

$f(2) = ? \rightarrow -2 + \left(\frac{1}{2}\right)^{-2} = 4 \checkmark$

هر ساعت $\frac{1}{9}$ کارانه میزند

$$1 \xrightarrow{\frac{1}{9}} \frac{1}{9} \xrightarrow{\frac{1}{9}} \frac{1}{81} \rightarrow \dots$$

$$\log_4 9 = 2 \log_4 3 = \frac{2}{\log_4 3} = \frac{2}{1 + \log_4 3} = \frac{2}{19}$$

$$\log_4 1 = 2 \log_4 1 = \frac{2}{\log_4 1} = \frac{2}{1 + \log_4 1} = \frac{2}{19}$$

بسیار از چند دقیقه $\frac{1}{4}$ جرم میگذرد

با چه فرکانس میزند؟

$$1 \times \left(\frac{1}{9}\right)^n = \frac{1}{4} \rightarrow n = \log_{\frac{1}{9}} \frac{1}{4} = \log_{\frac{9}{1}} \frac{4}{1} = \frac{1}{\log_{\frac{9}{4}} 9} = \frac{1}{\log_4 9 - \log_4 1}$$

$\log_4 9 = 1.4$ $\log_4 1 = 0$
 $\log_4 2 = \log_4 8 \times \log_4 5 = \frac{3}{12}$

$\log_4 1 = 0 \rightarrow = \frac{1}{\frac{1.4 - 0}{12} - 0} = \frac{19}{2}$ ساعت

هر هفته $\frac{1}{100}$ جرم کارانه میزند

$$1 \xrightarrow{\frac{1}{100}} \frac{1}{100} \xrightarrow{\frac{1}{100}} \frac{1}{10000} \rightarrow \dots$$

بسیار از چند روز $\frac{1}{100}$ جرم باقی میماند

$$1 \times \left(\frac{1}{100}\right)^n = \frac{1}{100} \rightarrow n = \log_{\frac{1}{100}} \frac{1}{100} = \log_{\frac{100}{1}} \frac{1}{100} = \frac{1}{\log_{\frac{100}{1}} 100} = \frac{1}{\log_{100} 100} = 1$$

$\log_2 2 = 1.4$ $\log_2 1 = 0.4$

$\log_2 1 = \log_2 2 \times \log_2 5 = 2 \log_2 2 \times \log_2 5 = \frac{2}{2} \times \frac{3}{5} = \frac{3}{5}$

$100 \times 100 = 10000$ روز \checkmark

... البته مسئله را درم

$$1 \xrightarrow{\frac{1}{100}} \frac{1}{100} \xrightarrow{\frac{1}{100}} \frac{1}{10000} \rightarrow \dots$$

هر روز $\frac{1}{100}$ جرم میزند و ...

$$1 \times \left(\frac{1}{100}\right)^n = \frac{1}{100} \rightarrow n = \log_{\frac{1}{100}} \frac{1}{100} = \log_{\frac{100}{1}} \frac{1}{100} = \frac{1}{\log_{\frac{100}{1}} 100} = \frac{1}{\log_{100} 100} = 1$$

$\log_2 2 = 0.2$ $\log_2 1 = 0.18$

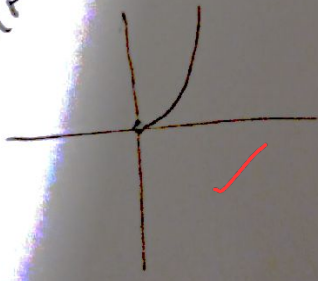
$\log_2 2 = \log_2 2 \times \log_2 1 = \frac{2}{2} \times \frac{1}{1} = \frac{2}{1}$

$\log_{100} 100 = 1$ $\log_{100} 1 = 0$
 $\log_{100} 100 = 1$ $\log_{100} 1 = 0$

$y = 9 \log_2^n D_p = n$

$y = \log_2^n D = R - 1.1$

$9 \log_2^n = n \log_2^n = n^2$



(3) $\frac{1}{100}$ جرم