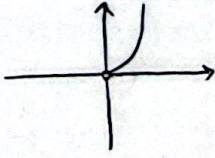
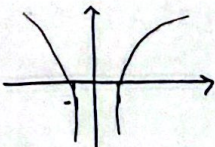


$f(x) = -2 + \left(\frac{1}{r}\right)^{Ax+B}, y = x^r - x \quad x = 1, 2$ <p>if $x=1 \rightarrow x^r - x = 0$, if $x=2 \rightarrow x^r - x = 2$</p> $f(x) = -2 + \left(\frac{1}{r}\right)^{A+B} \Rightarrow \frac{-A-B}{r} = 2, -A-B=1$ $f(x) = -2 + \left(\frac{1}{r}\right)^{2A+B} \Rightarrow \frac{2A-B}{r} = 2, -2A-B=2$ $f(2) = -2 + \left(\frac{1}{r}\right)^{-3} = -2 + \left(\frac{1}{r}\right)^{-3} = 4$	<p>6</p>
$\log_{\frac{1}{r}} = r, t, \log_{\frac{1}{r}} = 1, t$ $f(t) = M \left(\frac{1}{r}\right)^t = \frac{1}{r} M \rightarrow \log_{\frac{1}{r}} \left(\frac{1}{r}\right)^t = \log_{\frac{1}{r}} \frac{1}{r} \Rightarrow t \log_{\frac{1}{r}} \frac{1}{r} = -\log_{\frac{1}{r}} r$ $\log_{\frac{1}{r}} \frac{1}{r} = \log_{\frac{1}{r}} r - \log_{\frac{1}{r}} r = r \log_{\frac{1}{r}} r - r \log_{\frac{1}{r}} r = \left(r \frac{1}{r}\right) - r \left(\frac{1}{r}\right) = \frac{1}{r} - \frac{1}{r} = \frac{-1}{r}$ $\log_{\frac{1}{r}} r = \log_{\frac{1}{r}} \frac{1}{r} + \log_{\frac{1}{r}} r = \frac{1}{r} + \frac{1}{r} = \frac{2}{r} \Rightarrow t \left(\frac{-1}{r}\right) = -\frac{2}{r} \Rightarrow t = \frac{2}{1} = 2 \Rightarrow 2 \text{ min}$	<p>7</p>
$y = \left(1 - \frac{1}{\lambda}\right)^{\frac{t}{v}} \times M = \left(\frac{\lambda}{\lambda}\right)^{\frac{t}{v}} \times M, \left(\frac{\lambda}{\lambda}\right)^{\frac{t}{v}} \times M = \frac{1}{v} M \Rightarrow \left(\frac{\lambda}{\lambda}\right)^{\frac{t}{v}} = \frac{1}{v}$ $\log_{\frac{\lambda}{\lambda}} \left(\frac{\lambda}{\lambda}\right)^{\frac{t}{v}} = \log_{\frac{\lambda}{\lambda}} \frac{1}{v} \Rightarrow \frac{t}{v} (\log_{\frac{\lambda}{\lambda}} \lambda - \log_{\frac{\lambda}{\lambda}} \lambda) = -\log_{\frac{\lambda}{\lambda}} v \Rightarrow \log_{\frac{\lambda}{\lambda}} \lambda = \frac{1}{\log_{\frac{\lambda}{\lambda}} v} = \frac{1}{\frac{1}{\log v}} = \log v$ $\frac{t}{v} \left(\frac{1}{v} - \frac{1}{\lambda}\right) = \frac{1}{v} \Rightarrow \frac{t}{v} \left(\frac{\lambda - 1}{\lambda v}\right) = \frac{1}{v} \Rightarrow t = \frac{v}{\lambda - 1}$	<p>8</p>
$\text{تکلیف اولی} = \frac{100}{100} \rightarrow \text{بهره مرکب} = \frac{94}{100} = \frac{47}{50}, \text{بهره} = \left(\frac{47}{50}\right)^n$ $\left(\frac{47}{50}\right)^n = \frac{1}{2} \Rightarrow \left(\frac{47}{50}\right)^n = \frac{1}{2} \rightarrow \log \left(\frac{47}{50}\right)^n = \log \frac{1}{2} \Rightarrow n \log \frac{47}{50} = \log \frac{1}{2}$ $n (\log 47 - \log 50) = \log \frac{1}{2} \Rightarrow n (2 \log 47 - (2 \log 25 + \log 2)) = \log \frac{1}{2}$ $\Rightarrow n (2 \times 0,7 + (2 \times 0,17 + 0,3)) = 0,3 \Rightarrow n (1,14 - 0,3) = 0,3 \Rightarrow n = \frac{0,3}{0,84} \approx 0,36$	<p>9</p>
<p>ا) $y = a \log_r x = x \log_r a = x^r, x > 0 \Rightarrow$</p>  <p>ب) $y = \log_r x^r, x^r > 0 \Rightarrow D_f = \mathbb{R} - \{0\}$ $\hookrightarrow r \log x$</p> 	<p>10</p>