

1.113/2.1 $x \cdot 2\log^3 x - 1.5\log x > \sqrt{10} = x^{\frac{1}{10}} \cdot x^{\frac{9}{10}}$

המשוואה
 $x > 0$

$0 < x < 1$

$x > 1$

$2\log^3 x - 1.5\log x > \log x \cdot x^{\frac{9}{10}}$
 $2\log^3 x - 1.5\log x > \frac{1}{\log x \cdot x^{\frac{9}{10}}}$
 $2\log^3 x - 1.5\log x > \frac{1}{2\log x} \quad / \cdot \log x > 0$
 $2\log^4 x - 1.5\log^2 x > \frac{1}{2} \quad / \cdot 2$
 $4\log^4 x - 3\log^2 x - 1 > 0$
 $\log^2 x = t$
 $4t^2 - 3t - 1 > 0$
 $t > 1 \quad \vee \quad t < -\frac{1}{4}$

$2\log^3 x - 1.5\log x < \log x \cdot x^{\frac{9}{10}}$
 $2\log^3 x - 1.5\log x < \frac{1}{2\log x} \quad / \cdot 2\log x < 0$
 $4\log^4 x - 3\log^2 x > 1$
 $\log^2 x = t$
 $4t^2 - 3t - 1 > 0$
 $t > 1 \quad \vee \quad t < -\frac{1}{4}$
 $\log^2 x > 1$
 $\log x > 1 \quad \vee \quad \log x < -1$
 $x > 10 \quad \vee \quad x < \frac{1}{10}$
 $\log^2 x < -\frac{1}{4}$
 \emptyset

$\log^2 x > 1$
 $\log x > 1 \quad \vee \quad \log x < -1$
 $x > 10 \quad \vee \quad x < \frac{1}{10}$

$0 < x < \frac{1}{10} \quad \vee \quad x > 10$

1.113/4

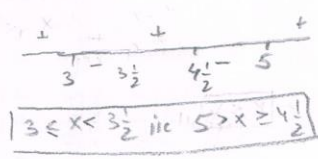
$\log_{x-4} 3 + \log_{2x-7} 3 \leq 0$
 $\frac{\log 3}{\log(x-4)} + \frac{\log 3}{\log(2x-7)} \leq 0$

$5 \neq x > 4 \leftarrow 1 \neq x-4 > 0$
 $4 \neq x > 3.5 \leftarrow 1 \neq 2x-7 > 0$
 $5 \neq x > 4 \quad : \text{אבסור}$

$\log 3 \left(\frac{1}{\log(x-4)} + \frac{1}{\log(2x-7)} \right) \leq 0$
 $\frac{1}{\log(x-4)} \leq -\frac{1}{\log(2x-7)} = -\log(2x-7) = \log\left(\frac{1}{2x-7}\right)$

המשוואה
 $x=5$

$x-4 \geq \frac{1}{2x-7}$
 $0 \geq \frac{-2x^2 + 15x - 27}{2x-7} = \frac{-2(x-4)(x-3)}{2(x-3.5)}$



$\log_{x-4} 3 + \log_{2x-7} 3 \leq 0 \quad \vee \quad \frac{1}{2} \leq x < 5$