1.109

א

$(2m+1)4^{-x} - 2(5m+2)2^{-x} + 5m+3 = 0$

נסמן $2^{-x} = t$ ונקבל

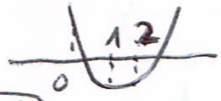
$t^2(2m+1) - 2t(5m+2) + 5m+3 = 0$

$x < -1 \quad , \quad x > 0$

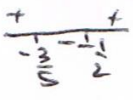
$t_1 = 2^{-x} < 2^0 = 1$ כי $t_2 = 2^{-x} > 2^1 = 2$

כדי שיהיו 2 פתרונות חלק $2m+1 \neq 0$

$t^2 - t\,\frac{10m+4}{2m+1} + \frac{5m+3}{2m+1} = 0$

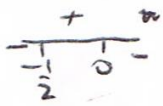


$f(0) > 0$ כי $\frac{5m+3}{2m+1}$



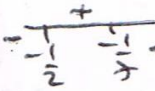
$m > -\frac{1}{2}$ או $m < -\frac{3}{5}$

$f(1) > 0$ כי $1 - \frac{10m+4}{2m+1} + \frac{5m+3}{2m+1} = \frac{-3m}{2m+1}$

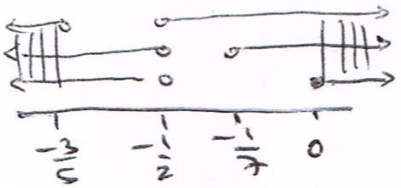


$m > 0$ או $m < -\frac{1}{2}$

$f(2) > 0$ כי $4 - \frac{20m+8}{2m+1} + \frac{5m+3}{2m+1} = \frac{-7m-1}{2m+1}$



$m > -\frac{1}{7}$ או $m < -\frac{1}{2}$



$m > 0$ או $m < -\frac{3}{5}$