

3.66

1.

$$\frac{\log_3 \left(1 - \frac{3^x}{2}\right)}{\log_3 2x} \geq 1$$

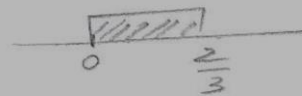
איפוס המכנה יעשה בהמשך

$$\begin{aligned} 1 - \frac{3^x}{2} > 0 \\ 2x > 0 \end{aligned}$$

$$2 - 3^x > 0$$

$$\frac{2}{3} > x$$

$$x > 0$$



$$\frac{\log_3 \left(1 - \frac{3^x}{2}\right)}{\log_3 2x} \geq 1 \Rightarrow \frac{2 \log_3 \left(1 - \frac{3^x}{2}\right)}{\log_3 2x} - \frac{\log_3 2x}{\log_3 2x}$$

$$\leftarrow \frac{\log_3 \left(1 - \frac{3^x}{2}\right) - \log_3 2x}{\log_3 2x} \geq 0$$

$$\frac{\log_3 \left(\frac{\left(1 - \frac{3x}{2}\right)^2}{2x} \right)}{\log_3 2x} \geq 0$$

2/11 01/16

$$\frac{1 - 3x + \frac{9}{4}x^2}{2x} = 1$$

$$\frac{4 - 12x + 9x^2}{8x} = 1$$

$$4 - 12x + 9x^2 = 8x$$

$$9x^2 - 20x + 4 = 0$$

$$9x^2 - 18x - 2x + 4 = 0$$

$$9x(x-2) - 2(x-2)$$

$$x = \frac{2}{9} \quad | \quad \frac{1}{2}$$

2/11 01/16

$$2x = 1$$

$$x = \frac{1}{2}$$

