

$$7^{10x} = 12^{-x-9}$$

$$\log(7^{10x}) = \log(12^{-x-9})$$

Apply the log to both sides

$$10x\log(7) = (-x-9)\log(12)$$

Bring 10x and -x-9 down by a basic rule of logs

$$10x\log(7) = -x\log(12) - 9\log(12)$$

Distribute the log(12)

$$10x\log(7) + x\log(12) = -9\log(12)$$

Move -xlog(12) to the left

$$x(10\log(7) + \log(12)) = -9\log(12)$$

Factor x on the left

$$x = \frac{-9\log(12)}{10\log(7) + \log(12)}$$