

$$|-r|^{3} = (|-r|)(|+r+r|^{2})$$

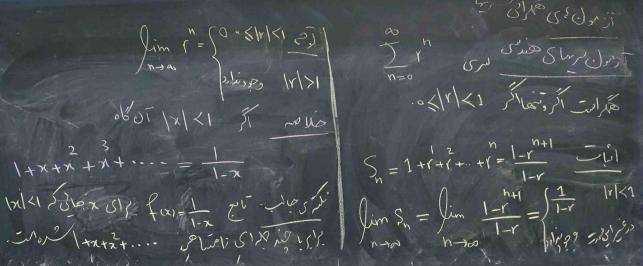
$$\Rightarrow |+r+r|^{2} = \frac{|-r|}{|-r|}$$

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$$(1+x) = 1 + nx + n(n-1) x^{2} + \dots$$

$$(1+x) = 1 + 2x + x^{2}$$

$$(1+x) = 1 + (-1)(-x) + \dots$$

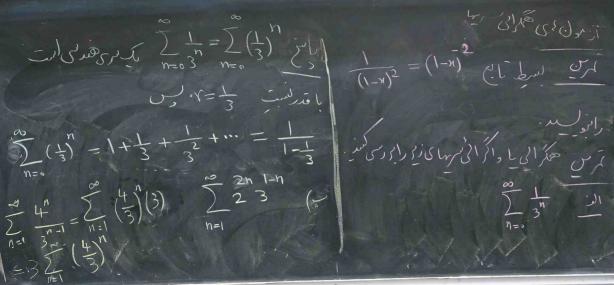
$$(-1)(-2)(-x) + \dots = 1$$

$$|x| < 1$$

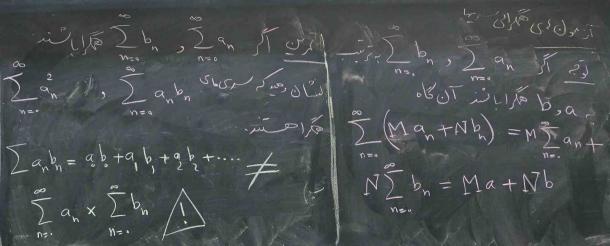
$$|x| < 1$$

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$$\frac{2}{1-r} = \frac{2}{1-r} = \frac{2}$$



$$\sum_{n=0}^{\infty} \frac{2^{n+1}}{4^n} = \sum_{n=0}^{\infty} \frac{2^n}{4^n} + \sum_{n=0}^{\infty} \frac{3^n}{4^n} = 2\sum_{n=0}^{\infty} (\frac{1}{2})^n + \sum_{n=0}^{\infty} (\frac{3}{4})^n$$

$$= 2 \times \frac{1}{1-\frac{1}{2}} + \frac{1}{1-\frac{3}{4}}$$

