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(22) $\displaystyle\sum_{n=0}^{\infty} \frac{7\cdot 3^n}{11^n} = 7\sum_{n=0}^{\infty}\left(\frac{3}{11}\right)^n$

$$7\left(1+\frac{3}{11}+\left(\frac{3}{11}\right)^2+\cdots\right)$$

$$7\left(\frac{1}{1-\frac{3}{11}}\right) = 7\left(\frac{1}{\frac{8}{11}}\right) = 7\cdot\frac{11}{8}$$

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25 $\sum_{n=2}^{\infty} e^{3-2n} = e^3 \cdot \sum e^{-2n}$

$\sum_{n=2} e^{-2n} = e^{-4} + e^{-6} + e^{-8} + \cdots$

$= \frac{e^{-4}}{1-e^{-2}} \cdot e^3 = \frac{e^{-1}}{1-e^{-2}}$

$\frac{e}{e^2-1}$

$e^{-1} + e^{-3} + e^{-5} + \cdots$

$\frac{e^{-1}}{1-e^{-2}} \longrightarrow \frac{e}{e^2-1}$

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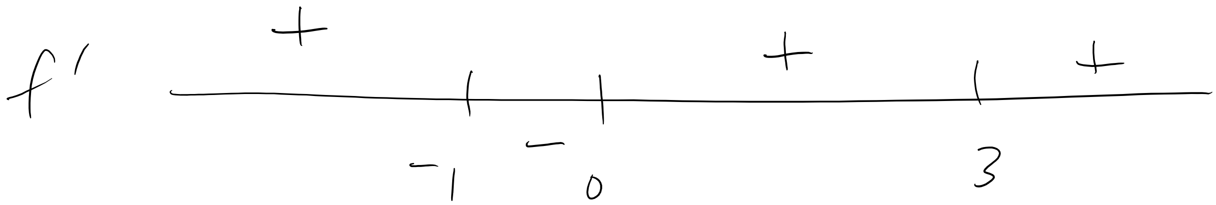
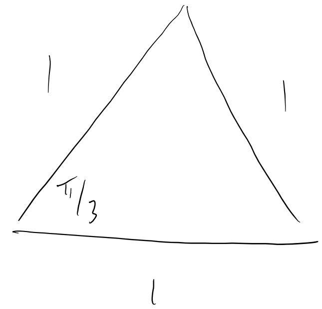


A

10 $\dfrac{-2}{e^2} + \dfrac{4}{e^3} - \dfrac{8}{e^4} + \dots$

$r = \dfrac{-2}{e}$ Sum $= \dfrac{\frac{-2}{e^2}}{1 - -\frac{2}{e}} = \dfrac{\frac{-2}{e^2}}{1+\frac{2}{e}}$

$= \dfrac{-2}{e^2 + 2e}$ B



$$\text{area} = \frac{1}{2}ab\sin C = \frac{\sqrt{3}}{4}$$

Perimeter: $4 \rightarrow 16/3 \rightarrow 64/9$

$$P = 4\left(4/3\right)^{n-1} \longrightarrow \infty$$

Area: $\frac{\sqrt{3}}{4} + \frac{\sqrt{3}}{9} + \frac{\sqrt{3}}{20.25} + \cdots$

$r = 4/9$

$$\frac{\frac{\sqrt{3}}{4}}{1-4/9} = \frac{\frac{\sqrt{3}}{4}}{\frac{5}{9}}$$

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