5. Hafta Cuma Dersi

3 Kasım 2023 Cuma 14:08

Materialised Indulision



- Terrel Adm: n=a için ifade doğrumu? P(a)?

Song clarate; Yn 70 ign P(n) dogradu.

exitlik / > esitirulik Livilor

 $\frac{1}{(2k+4)!} = \frac{1}{(2k+2+2)!}$

17. $\prod_{i=0}^{\infty} \left(\frac{1}{2i+1} \cdot \frac{1}{2i+2} \right) = \frac{1}{(2n+2)!}, \text{ for all integers } n \ge 0.$

$$\forall n \geqslant 0 \quad \text{Kin} \qquad \left(\frac{1}{1} \cdot \frac{1}{2}\right) \cdot \left(\frac{1}{3} \cdot \frac{1}{4}\right) \cdot \left(\frac{1}{5} \cdot \frac{1}{6}\right) \cdot \cdots \cdot \left(\frac{1}{2n+1} \cdot \frac{1}{2n+2}\right) = \frac{1}{(2n+2)!}$$

 $\frac{\text{ispat}: \text{ Tend adm}: n=0}{\left(\frac{1}{1},\frac{1}{2}\right)} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} \Rightarrow P(0) \text{ dignature}.$

indularyon admi Bir k>0 igin P(k) dogno olson:
$$\frac{1}{2k+1} \cdot \frac{1}{2k+2} = \frac{1}{2k+2} \cdot \frac{1}{2k+$$

n = k+1 isin; $\left(\frac{1}{1}, \frac{1}{2}\right) \cdot \left(\frac{1}{3}, \frac{1}{4}\right) \cdot \cdots \cdot \left(\frac{1}{2k+1}, \frac{1}{2k+2}\right) \cdot \left(\frac{1}{2(k+1)+1}, \frac{1}{2(k+1)+2}\right)$

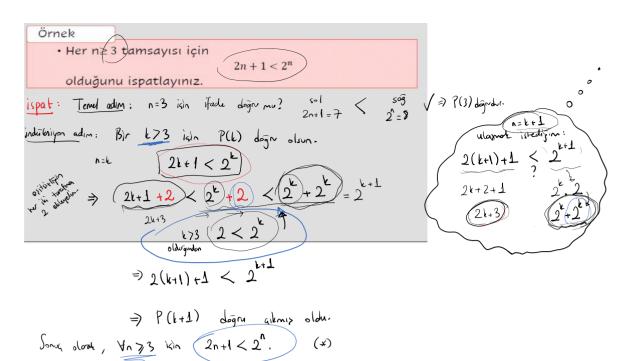
$$= \underbrace{\frac{1}{(2k+2)} \cdot \left(\frac{1}{(2(k+1)+1)} \cdot \frac{1}{2(k+1)+2} \right)}_{}$$

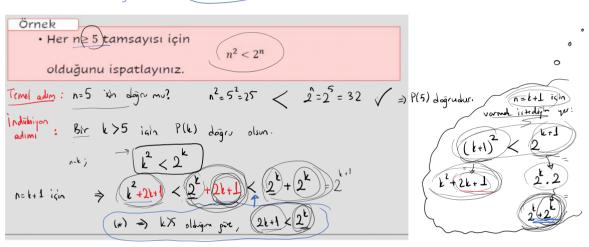
$$= \frac{1}{(2k+2)!} \cdot \left(\frac{1}{2k+3} \cdot \frac{1}{2k+4}\right) = \frac{1}{(2k+2)!(2k+3)!(2k+4)} = \frac{1}{(2k+4)!} = \frac{1}{(2k+4)!}$$

=> P(k+1) dogn (1km) oldu.

: Yn > 0 '14'n P(n) degrudur.

Esitsialit üzerine kurulu mat ind. Genetuleri:





 $\Rightarrow (k+1)^2 < 2^{k+1} \Rightarrow P(k+1) \text{ dog}_{V} \text{ c.kmin} \text{ oldv}.$

If a, b, and c are integers and $a^2 + b^2 = c^2$, then at least one of a and b is even.

Multiply In the alabam yole !

 $\forall a,b,c \in \mathbb{Z}$ ign $a^2+b^2=c^2$ \Rightarrow a we biden en at biri gift shoulder.

4. hafta Coma derindelui is potterdes birisi levllonlacede.