



$$\frac{1}{\sqrt{1-x^2}} = \sum_{n=0}^{\infty} \frac{(2n)!}{4^n (n!)^2} x^{2n}$$
$$\frac{x}{\sqrt{1-x^2}} = \sum_{n=0}^{\infty} \frac{(2n)!}{4^n (n!)^2} x^{2n+1}$$
$$\frac{1}{1-x^2} = \sum_{n=0}^{\infty} x^{2n}$$
$$\frac{x}{1-x^2} = \sum_{n=0}^{\infty} x^{2n+1}$$
$$\frac{1}{\sqrt{1-x^2}} = \frac{1}{1-x^2} \cdot \frac{1}{\sqrt{1-x^2}}$$
$$\frac{1}{\sqrt{1-x^2}} = \sum_{n=0}^{\infty} \sum_{k=0}^{\infty} \frac{(2n)!}{4^n (n!)^2} x^{2n} \cdot x^{2k}$$
$$\frac{1}{\sqrt{1-x^2}} = \sum_{n=0}^{\infty} \sum_{k=0}^{\infty} \frac{(2n)!}{4^n (n!)^2} x^{2(n+k)}$$
$$\frac{1}{\sqrt{1-x^2}} = \sum_{n=0}^{\infty} \sum_{k=0}^{\infty} \frac{(2n)!}{4^n (n!)^2} x^{2n} \cdot x^{2k}$$
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