$$\sum_{2}^{n+3}\left(2-\frac{1}{j}\right)=\sum_{2}^{n+3}2-\sum_{2}^{n+3}\frac{1}{j}$$

$$=2(n+2)-\left(\sum_{1}^{n+3}\frac{1}{j}-1\right)$$

$$=2(n+2)-\left(\sum_{1}^{n}\frac{1}{j}+\frac{1}{n+1}+\frac{1}{n+2}+\frac{1}{n+3}-1\right)$$

$$=\left(2(n+2)-\frac{1}{n+1}-\frac{1}{n+2}-\frac{1}{n+3}+1\right)-x$$