

Exempel B2.7. Avgör om

$$\sum_{k=1}^{\infty} \frac{1+k}{\sqrt{k+k^2}}$$

är konvergent.

Lösning:  $\left(\frac{1+k}{\sqrt{k+k^2}} \rightarrow 0 \text{ di } k \rightarrow \infty.\right)$

$$0 \leq \frac{1+k}{\sqrt{k+k^2}}$$

$$\frac{1+k}{\sqrt{k+k^2}} \geq \frac{k}{2k^2} = \frac{1}{2k}$$

$$\sum_{k=1}^{\infty} \frac{1}{2k} = \frac{1}{2} \sum_{k=1}^{\infty} \frac{1}{k} = \infty$$

$$\Rightarrow \sum_{k=1}^{\infty} \frac{1+k}{\sqrt{k+k^2}} = \infty$$

SNR: Divergent.