

$\sum 11.7$   
#34  
Diverges.

Limit Comparison

$$\sum \frac{1}{n+n \cos^2 n}$$

$$\frac{\frac{1}{n+n \cos^2 n}}{\frac{1}{n}} = \frac{1}{n+n \cos^2 n} = \frac{n}{n(1+\cos^2 n)}$$

$$= \frac{1}{1+\cos^2 n}$$

Pick  $\sum \frac{1}{n}$   
 $\sum 11.9$  #s 1-18, 33  
may be reduced.

Since  $0 \leq \cos^2 n \leq 1$

But .

$$1 \leq \frac{1}{1+\cos^2 n} \leq \frac{1}{2}$$

is squeezed in between so they grow the same.

DIRECT  
Comparison

$$a_n \leq b_n \ \& \ \sum b_n \text{ converges}$$

$\Rightarrow$  Converges

$$a_n \geq b_n \ \& \ \sum b_n \text{ Diverges}$$

$\Rightarrow \sum a_n \text{ Diverges}$

$$\frac{1}{n+\cos^2 n} \geq \frac{1}{n+n} = \frac{1}{2n} \ \& \ \sum \frac{1}{2n} \text{ Diverges}$$

so  $\sum \frac{1}{n+\cos^2 n}$  diverges

