

Section 11.1: cont'd

Tuesday, March 17, 2015
11:35 AM

example: write the following in sigma notation:

$$\frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8} + \frac{1}{9} + \frac{1}{10}$$

(answers may vary)

$$\sum_{i=5}^{10} \frac{1}{i} \quad \text{or} \quad \sum_{j=1}^6 \frac{1}{j+4} \quad \text{or} \quad \sum_{k=0}^5 \frac{1}{k+5}$$

digression: why do we care?

$$4! = 4 \times 3 \times 2 \times 1$$

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \dots$$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots$$

$$e^x = \sum_{k=0}^{\infty} \frac{x^k}{k!}$$