

## Do the following series converge or diverge?

If a series converges, find the value to which it converges.

If you cannot find the exact value, approximate it by computing  $S_{100}$ .

How accurate is your approximation?

$$1. \sum_{k=0}^{\infty} \frac{-3}{5^k}$$

$$4. \sum_{k=2}^{\infty} \frac{1}{4^k + 7}$$

$$2. \sum_{k=1}^{\infty} \frac{3k^2 + 1}{2k^2 + k + 2}$$

$$5. \sum_{k=42}^{\infty} \frac{7^k}{5^k - k}$$

$$3. \sum_{k=13}^{\infty} \frac{1}{2^k}$$

$$6. \sum_{k=19}^{\infty} \frac{7^k}{11^k + k}$$