

Do the following series converge or diverge?

1.
$$\sum_{k=4}^{\infty} \frac{2k^2}{3k^3 - 1}$$

2.
$$\sum_{k=1}^{\infty} \frac{\sin(k) + 3}{5k^{17}}$$

3.
$$\sum_{k=3}^{\infty} \frac{7k}{k^{3/2} - 6k}$$