1. Determine whether the series converges or diverges. Explain your answer.

(a)
$$\sum_{k=1}^{\infty} \left(\frac{5}{2^k} + \frac{5}{k^2} \right)$$

(b) $\sum_{k=1}^{\infty} \frac{k^2 + 1}{2k^2 - k}$