$\frac{1}{2} + \frac{1}{5} + \frac{1}{8} + \frac{1}{11} + \frac{1}{14} + \cdots = \sum_{n=1}^{\infty} \frac{1}{3n-1}$. The function $f(x) = \frac{1}{3x-1}$ is continuous, positive, and decreasing on $[1, \infty)$, so the Integral Test applies.

$$\int_1^{\infty} \frac{1}{3x-1}\,dx = \lim_{t\to\infty} \int_1^t \frac{1}{3x-1}\,dx = \lim_{t\to\infty} \left[\tfrac{1}{3}\ln|3x-1|\right]_1^t$$
$$= \tfrac{1}{3}\lim_{t\to\infty} (\ln(3t-1) - \ln 2) = \infty,$$

so the series $\sum_{n=1}^{\infty} \frac{1}{3n-1}$ diverges.