Math 1B The integral test Feb 28 2020

1. Do the following converge or diverge?

(a) $\sum_{n=1}^{\infty} \frac{1}{n^2}$ (b) $\sum_{n=1}^{\infty} n^3$ (c) $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n}}$ (d) $\sum_{n=1}^{\infty} e^{-\sqrt{2}\ln(n)}$

(e) $\sum_{n=1}^{\infty} e^{-2n}$ (f) $\sum_{n=1}^{\infty} \frac{1}{3n-7}$ (g) $\sum_{n=1}^{\infty} \cos(\pi n)$

(h) $\sum_{n=1}^{\infty} \frac{1}{n^2+1}$ (i) $\sum_{n=1}^{\infty} \frac{1}{n^2\sqrt{1+n^2}}$

2. For which values of p is $\sum_{n=2}^{\infty} \frac{1}{n(\ln n)^p}$ convergent?