MATH 65B - Spring 2018

Groupwork 11: April 24, 2018

1. Determine whether the series converges or diverges.

$$(a) \qquad \sum_{n=1}^{\infty} \frac{1}{n(1 + (\ln(n)^2))}$$

$$(b) \qquad \sum_{n=1}^{\infty} \frac{e^{1/n}}{n^2}$$

Please, show all work.

2. Determine the values of p for which the series is convergent. *Hint: You can use the fact that $f'(x) = -\dfrac{p + \ln(x)}{x^2(\ln(x))^{p+1}}$.*

$$\sum_{n=2}^{\infty} \frac{1}{n(\ln(n))^p}$$

Please, show all work.

3. Determine whether the series converges or diverges.

$$(a) \qquad \sum_{n=1}^{\infty} \frac{\cos^2(n)}{n^2 + 1}$$

$$(b) \qquad \sum_{n=3}^{\infty} \frac{1}{\ln(\ln(n))}$$

Please, show all work.

3

4. Determine whether the series converges or diverges.

$$(a) \qquad \sum_{n=1}^{\infty} \frac{2n^5 + 4n^3 + 2n + 1}{\sqrt{n^{12} + n^8 + 7n^2 + 1}}$$

$$(b) \qquad \sum_{n=1}^{\infty} \sin\left(\frac{1}{n}\right)$$

Please, show all work.