

KFUPM - Math Dept. - MATH 102
Quiz 6 - Term 152. Inst.: Shadi Al-Omari

Name: _____ ID: _____ S.N.: _____

Question1 (3 pts): Find the limit of the sequence:

$$\sqrt{2}, \sqrt{2\sqrt{2}}, \sqrt{2\sqrt{2\sqrt{2}}}, \sqrt{2\sqrt{2\sqrt{2\sqrt{2}}}}, \dots$$

Question2 (4 pts): Determine whether the series is convergent or divergent. If it is convergent, find its sum.

$$\sum_{n=1}^{\infty} \left(\frac{1}{e^n} + \frac{1}{n(n+1)} \right)$$

Question3 (3 pts): Find the values of p for which the series is convergent

$$\sum_{n=3}^{\infty} \frac{1}{n \ln(n) [\ln(\ln n)]^p}$$