Math 102 – Section 6 Name: ______________________

Class Work – 15 May 2017 Monday Student number: ______________ Your Deptartment: ______________

In each ✎, put a ✓ in **exactly one** ◇ and **exactly one** □, and fill in the □ where necessary, to make the sentences into true statements. No explanation is required. There are correct answers and there are correcter answers.

✎ The series $\sum_{n=1}^{\infty} \frac{2^n}{3^n - 1}$ ✓◇ converges ◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST □ RT ✓□ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=2}^{\infty} \frac{1}{n} \sin\left(\frac{\pi}{n}\right)$ ✓◇ converges ◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ ✓□ LCT with $\sum \frac{1}{n^p}$ where $p =$ $\boxed{2}$

✎ The series $\sum_{n=1}^{\infty} (2017^{1/n} - 1)$ ◇ converges ✓◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ ✓□ DCT with $\sum \frac{1}{n^p}$ where $p =$ $\boxed{1}$

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=0}^{\infty} \frac{(2n)!}{5^n n!(n+1)!}$ ✓◇ converges ◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST ✓□ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=2}^{\infty} \frac{1}{n \ln n}$ ◇ converges ✓◇ diverges. This can *best* be seen by using

□ nTT ✓□ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=1}^{\infty} \frac{1}{2017^{\ln n}}$ ✓◇ converges ◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ ✓□ DCT with $\sum \frac{1}{n^p}$ where $p =$ $\boxed{2}$

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=1}^{\infty} (-1)^n 2017^{1/n}$ ◇ converges ✓◇ diverges. This can *best* be seen by using

✓□ nTT □ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ □ LCT with $\sum \frac{1}{n^p}$ where $p =$ □

✎ The series $\sum_{n=1}^{\infty} \frac{n+4}{n(n+1)(n+2)}$ ✓◇ converges ◇ diverges. This can *best* be seen by using

□ nTT □ IT □ AST □ RT □ nRT

□ DCT with $\sum r^n$ where $r =$ □ □ DCT with $\sum \frac{1}{n^p}$ where $p =$ □

□ LCT with $\sum r^n$ where $r =$ □ ✓□ LCT with $\sum \frac{1}{n^p}$ where $p =$ $\boxed{2}$