Web**Assign**

Hw 21 (11.3): Integral Tests and Estimates of Sums (Homework)

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MA 162 Spring 2012, section 321, Spring 2012
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Current Score : 19.17 / 20   **Due :** Thursday, March 8 2012 11:55 PM EST

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1. 1.67/2.5 points | Previous Answers   SCalcET7 11.3.003.

Use the Integral Test to determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{6}{\sqrt[5]{n}}$$

Evaluate the following integral.

$$\int_{1}^{\infty} \frac{6}{\sqrt[5]{x}}\, dx$$

✔

Since the integral |is| ✖ finite, the series is |divergent| ✔ .

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2. 2.5/2.5 points | Previous Answers   SCalcET7 11.3.004.MI.

Use the Integral Test to determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{7}{n^4}$$

Evaluate the following integral.

$$\int_{1}^{\infty} \frac{7}{x^4}\, dx$$

✔

Since the integral |is| ✔ | is | finite, the series is |convergent| ✔ | convergent | .

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3. 2.5/2.5 points | Previous Answers   SCalcET7 11.3.007.

Use the Integral Test to determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{n}{n^2 + 8}$$

Evaluate the following integral.

$$\int_{1}^{\infty} \frac{x}{x^2 + 8}\, dx$$

✔

Since the integral is not ✔ finite, the series is divergent ✔ .

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4. 2.5/2.5 points | Previous Answers   SCalcET7 11.3.011.

Determine whether the series is convergent or divergent.

$$1 + \frac{1}{8} + \frac{1}{27} + \frac{1}{64} + \frac{1}{125} + \cdots$$

⊙ convergent

○ divergent

✔

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5. 2.5/2.5 points | Previous Answers   SCalcET7 11.3.012.

Determine whether the series is convergent or divergent.

$$1 + \frac{1}{2\sqrt{2}} + \frac{1}{3\sqrt{3}} + \frac{1}{4\sqrt{4}} + \frac{1}{5\sqrt{5}} \cdots$$

⊙ convergent

○ divergent

✔

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6. 2.5/2.5 points | Previous Answers   SCalcET7 11.3.015.

Determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{\sqrt{n} + 2}{n^2}$$

- ● convergent
- ○ divergent

✔

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7. 2.5/2.5 points | Previous Answers

SCalcET7 11.3.017.

Determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{2}{n^2 + 81}$$

- ● convergent
- ○ divergent

✔

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8. 2.5/2.5 points | Previous Answers

SCalcET7 11.3.021.

Determine whether the series is convergent or divergent.

$$\sum_{n=2}^{\infty} \frac{4}{n \ln n}$$

- ○ convergent
- ● divergent

✔

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