**MA 126-103 — Summer 2017 — Dr. Clontz**

| | |
|---|---|
| Name: | |
| J#: | |
| Date: **2017 July 21** | |

Exercise Type (Cost):

**In-Class (1AP)**

| Standard: This student is able to... | Mark: |
|---|---|
| **C13: SerTech.** Identify series as convergent or divergent along with appropriate techniques to determine convergence or divergence. | |
| 3/4 ⋆ reattempt due on: | |

For each series, choose **one** technique that would be appropriate to determine convergence/divergence. (There may be multiple correct responses.) Then choose whether the series is convergent or divergent. You do not need to show your work.

$\sum_{k=0}^{\infty} \frac{9}{k^2+4}$

- Partial Sum Sequence
- Divergence Test
- Geometric Series Test
- Alternating Series Test
- Integral Test
- p-Series Test
- Ratio Test
- Root Test
- Direct/Limit Comp. Test

- Converges
- Diverges

$\sum_{m=3}^{\infty} \frac{m}{10}$

- Partial Sum Sequence
- Divergence Test
- Geometric Series Test
- Alternating Series Test
- Integral Test
- p-Series Test
- Ratio Test
- Root Test
- Direct/Limit Comp. Test

- Converges
- Diverges

$\sum_{n=2}^{\infty} 2(-\frac{6}{5})^n$

- Partial Sum Sequence
- Divergence Test
- Geometric Series Test
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- Converges
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| Standard: This student is able to... | Mark: |
|---|---|
| **C14: PowSer.** Identify the domain of a function defined as a power series. | |
| 2/4 ⋆ reattempt due on: | |

Find the domain of $f(x) = \sum_{m=0}^{\infty}(-1)^m \frac{x^{2m+1}}{(2m+1)!}$. For each endpoint, if they exist, write the appropriate series and label it as converges/diverges, but you do not need to show your work in determining if the series converges or diverges.

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Exercise Type (Cost):

**In-Class (1AP)**

| Standard: This student is able to... | Mark: |
|---|---|
| **C15: TaySer.** Generate a Taylor or Maclaurin series from a function. | |
| 1/3 ⋆ reattempt due on: | |

Generate the MacLaurin series (Taylor series where $a = 0$) for $f(x) = \sin(x)$.