Calculus I
Spring 2015

Test 2

Name: _____
D. P. Story

Part I. (100 points) Solve each of the problems without error. If you make an error, points will be subtracted from your total score.

(5^{pts}) **1.** This is an example of a objective question, the student fills in his/her response in the space below.

5 pts

(5^{pts}) **2.** An example of a fill-in question: It is well known that _____ and _____ are jointly credited as the founders of modern calculus.

5 pts

($3^{\text{pts}}_{\text{ea.}}$) **3.** *True* or *False*. No justification needed.

(a) _____ If triangles have 4 sides, then all monkeys are green. Now is the time for all good men to come to the aid of their country.

(b) _____ $1 + 1 = 3$ iff $\sqrt{2}$ is a rational number. Now is the time for all good men to come to the aid of their country.

(c) _____ $(\forall x)(\exists y)(xy > 1)$ (x, y real numbers). Now is the time for all good men to come to the aid of their country.

(d) _____ $(\forall x)(\exists y)(\forall z)(z(x + y) > 0)$, ($x$, y, and z real numbers).

12 pts

(15^{pts}) **4.** Here is an example of a auto calculate problem. It takes the optional argument '`[\auto]`'. You specify the points associated with each part using the `\PTs` command.

(a) (10 pts) This a hard one!

(b) (5 pts) This one is "half" as hard.

15 pts

(11^{pts}) **5.** Select the correct answer for each of the following multiple choice. There is only one correct answer.

(a) (5 pts) In what year did Columbus sail the ocean blue?

☐ 1490 ☐ 1491 ☐ 1492 ☐ 1493

(b) (6 pts) In what year did Columbus sail the ocean blue?

☐ 1490
☐ 1491
☐ 1492
☐ 1493

11 pts

48 pts

(5^{pts}) **6.** Which of the following best describes Augustin Cauchy?

- ☐ He developed the Calculus while his University was closed for the plague.
- ☐ Given credit for first using the functional notation $f(x)$.
- ☐ He created the "bell-shaped curve" and first used the method of least squares.
- ☐ He first formulated a precise definition of the limit and continuity of a function.
- ☐ Gave a rigorous definition of the definite integral—an integral that now bears his name.
- ☐ His notation for the derivative and the integral is used even to this day.

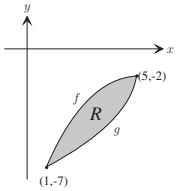
5 pts

(3^{pts}) **7.** This is a question. Work on the back of page 1, and be quick about it!
Peter piper picked a peck of pickled peppers, how many pecks of pickled peppers did Peter Piper pick?

Answer:

3 pts

(7^{pts}) **8.** This is a question. Now is the time for all good men to come to the aid of their country. Peter Piper picked a peck of pickled peppers. Use the figure below.



7 pts

(5^{pts}) **9.** This is a question worth 5 points.

5 pts

($10^{\text{pts}}_{\text{ea.}}$) **10.** Answer each of the following questions.

(a) This is a question.

(b) This is a question.

20 pts

40 pts

(12 pts) **11.** Solve each of the following. Work on the back of page 2

(a) This is a question. Be sure you don't make any error, I'm watching.

(b) This is a question.

(c) This is a question.

(d) This is a question.

12 pts

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12 pts

Part II. (50 points) The following is a short review of previously mastered material.

(5 pts) **1.** This is a question.

5 pts

(7 pts) **2.** This is a question.

7 pts

(8 pts) **3.** This is a question.

8 pts

(5 pts) **4.** This is a question.

5 pts

25 pts

(10^{pts}) **5.** This is a question.

10 pts

(5^{pts}) **6.** This is a question.

5 pts

(10^{pts}) **7.** This is a question.

10 pts

25 pts

Solutions to Test 2

Part I.

1. The solution to the question. This solution will not appear when the option `nosolutions` is specified. It will appear immediately after the question with the `solutionsafter` option, and appear at the end of the document if a solutions option is not specified. □

2. It is well known that Newton and Leibniz are jointly credited as the founders of modern calculus.

Notes. Here the optional argument for the `solution` environment is not specified, this implies that no room should be left for the student to answer, seems reasonable since this is a fill-in. □

4. (a) This is a tough solution. □

4. (b) This solution is easy. □

5. (a) Yes, Columbus sailed the ocean blue in 1492. □

5. (b) Yes, Columbus sailed the ocean blue in 1492. □

6. This is a solution to a problem question. □

7. This is the solution, let's hope it's correct, or I would be embarrassed to no end. □

8. This a really good solution. I hope this solution is correct or I will be embarrassed to no end. Even if it is wrong, maybe the students will appreciate my effort. You can see from the figure that the solution is obvious. (You could also use commands from a figure wrapping package as well.) □

9. This a really good solution. I hope this solution is correct or I will be total embarrassed to no end. Even if it is wrong, maybe the students will appreciate my tremendous effort. You can see from the figure that the solution is obvious. □

10. (a) Now is the time for all good men to come to the aid of their country. Now is the time for all good men to come to the aid of their country. Now is the time for all good men to come to the aid of their country. □

10. (b) Now is the time for all good men to come to the aid of their country. Now is the time for all good men to come to the aid of their country. Now is the time for all good men to come to the aid of their country. □

11. (a) This is the solution. □

11. (b) This is the solution. □

11. (c) This is the solution. □

11. (d) This is the solution. □

Part II.

1. This is the solution to answer all questions. □

2. This is the solution to answer all questions. □

3. This is the solution to answer all questions. □

4. This is the solution to answer all questions. □

5. This is the solution to answer all questions. □

6. This is the solution to answer all questions. □

7. This is the solution to answer all questions. □