

This computer-administered exam consists of ten items, with at least eight correct answers required for a pass. The exam is administered through the WeBWorK system, with easiest access coming through the “Gateway Exam” link in the left sidebar on the course web page (Google for “jons central” and follow the Fall 2023 Calc 1 link). The exam allows 60 minutes, but if you come prepared time should not be a major factor.

The exam selects questions at random from ten pools, but will always include:

- At least one Product Rule and one Quotient Rule problem (see 3-26 in §2.4 for practice)
- At least one Chain Rule problem (see 7-42 in §2.5 for practice)
- At least one question over derivatives of basic and reciprocal trig functions (see 5-34 in §3.6 for review)
- At least one question involving the derivative of an inverse trig function (be sure to know the derivatives of  $\sin^{-1} x$  and  $\tan^{-1} x$ )
- At least one problem involving use of both the Product and Quotient Rules
- At least one problem involving use of both the Product and Chain Rules and at least one problem involving use of both the Quotient and Chain Rules (see 33-40 in the Chapter 2 Review for practice)
- At least one problem involving a second derivative
- At least one problem involving the derivative of a function given implicitly (see 3-16 in §2.6 for practice)

A few tips and points of information:

- Don't make these harder than they are.
- Calculators such as the TI-89, which perform symbolic differentiation, are not allowed for this gateway exam.
- Scratch paper is available – just ask.
- No consultation with other resources, human, online, or otherwise, is allowed while taking the gateway exam.
- The gateway exam can only be taken under the supervision of a proctor. All faculty in the Department of Mathematical Sciences, as well as the Undergraduate Assistants who staff the evening Math Help Sessions, are authorized to proctor.
- Only the three computers in the Lindsay Lounge will normally be used for proctoring the gateway exams, so plan to do it early or plan to wait in line.

55 out of 50 points if you succeed by 10pm on 11/15/23;  
–10 points  $\times$  [weeks beyond that date]