



# Partial Credit Requests

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**Context:** Out of class; Pre-Calculus

**Keywords:** exam wrapper, written reflection, mathematics, online courses

**Student Activity Time:** 1-2 hours

*Students reflect on their exam performance and return a written description of their errors.*

## Introducing the Reflection Activity

Pre-calculus courses are a fundamental building block of engineering and success in these courses may be a motivating factor for some students. In these online courses, a Partial Credit Request assignment is associated with each exam to provide students a way to earn extra points as opposed to giving the points away. After each exam, students are given two days to write an explanation of what they did wrong on questions in order to earn back some partial credit. The purpose of this activity is to assist students in learning from their errors on a mathematics exam.

Students were given a regularly scheduled exam in a proctored environment and returned their tests to the educator for grading. The educator graded the exams in such a way to indicate only if answers were correct, incorrect, or partially correct. Only the questions that were marked as partially correct were eligible for the Partial Credit Request activity. The educator required the Partial Credit Request form as a second stage of the exam; therefore students who did not complete the activity received a 0 for the entire exam. In the next session, students received a scanned copy of their graded exams, a solution key, instructions, and form for Partial Credit Requests. Students were allowed two days to reflect on their exam responses alongside of the solution key, and describe, in detail, their mistakes for each eligible question. The educator used a 4-point grade scale to award partial credit for the explanation of each question.

The educator has seen a variety of outcomes from this activity including increased exam scores, and developed the habit of reviewing exams. Students also improved their confidence in mathematics, because of the opportunity to respond to their errors and practice communicating math.

## Recreating the Reflection Activity

	Description
1	Administer the exam.
2	Return graded exams to students, solution key, and provide assignment instructions to students.
3	Provide students with three to four days to complete the assignment.
4	Grade Partial Credit Requests for written response.
5	Adjust final grade for each student based on the Partial Credit Request.

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7.1 Partial Credit Requests – Instructions

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7.2 Partial Credit Requests - Form

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## In the words of the Educator: Tips and Inspiration

*Focus students' attention on articulating their errors.* Sometimes students don't notice all of the directions and re-do all of the questions. The issue is that I've already given them all the answers, so the point is not to just rework problems. I want them to talk about their work, articulate their errors on each of the problems, and explain why it's wrong. With an "all or nothing" grade, the penalty can be pretty high, so I'll accept them late, and dock a small percentage. Even if they do it late, they have learned from their mistake, which is the goal.

*Get students to help each other.* When I did the activity in class, I usually had 2 or 3 students who got a 90% or 100% on the exam and would have them be classroom tutors. People would raise their hands to ask for help to figure out what they did wrong. Now that I have students do this out of class, I still encourage them to get help if they need it. They can always go to tutors, me, or each other if they need help figuring out what they did wrong.

*What was the inspiration for the reflection activity?* When I first started teaching, I learned about this assignment from a faculty member from another community college. He would pass back their exams and tell everyone "you cannot have a pencil on your desk, only a red pen. You're going to go through, find your errors and notate them, and write a sentence to explain what your mistake ways." The process was pretty long when everything was done in class. I teach a lot online now and I've streamlined the process for those classes.

My main goal is for them to learn from their mistakes. Students shouldn't be content with a 72% on an exam. When I gave students back their exams, they were excited about a 75%, because they passed. They would shove the test into their bag or throw it away as they walk out of the door, and they're not learning from that.