Uploading Problems to WeBWork

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1.0 Introduction

The following document provides a brief tutorial on how to upload homework problems to WeBWork. This document assumes the user has administrative access to a WeBWork server, as well as an active WeBWork account. Administrative access on WeBWork refers to a user who can manage the files in a local server. These users are typically a professor at a college or university. WeBWork-authors may also be granted administrative privileges to some courses offered by a school so they can write, test, and add problems to a certain course.

1.1 Purpose

The remainder of this document provides a step-by-step tutorial to uploading homework problems on a local server, as well as how to debug basic issues encountered when adding a problem. This document was written for the Department of Applied Mathematics at Wentworth Institute of Technology. Any screenshots of the internal file directory will most likely vary from the file directory of other schools, but the user interface of WeBWork is standardized for all WeBWork clients.

1.2 Definitions and Acronyms

The following section defines all vocabulary required for an adequate understanding of WeBWork problem uploading.

1.2.1 Definitions

Administrator

- A user who has access to alter course information and file directories on a WeBWork account. Users with administrative privileges are typically WeBWork authors or professors at a college or university.

Author

- A user who writes problems to be used on WeBWork. An author must have administrative privileges to the local server in order to upload problems.

Homework Set

- A collection of problems that are assigned to a student.

Local Directory

- A directory accessible by a specific college or university. Problems can be saved on a school's local server and used in courses belonging to the school when creating and assigning homework sets.

Local Server

- A server hosted by a school that can be used to store problems written by or belonging to the school. Users with administrative privileges can store problems or other relevant data in the local server. Courses under the school's account are granted access to the files stored on the local server and can use these files in homework sets.

Student

- A user who is assigned homework problems on WeBWork but does not have administrative privileges.

User

- Someone who views, accesses, or uses WeBWork.

WeBWork

- An open source homework system provided by the MAA.

1.3.2 Acronyms

MAA

- Mathematical Association of America. The association that provides and maintains WeBWork .

UI

- User Interface. Content that is displayed to a user.

WIT

- Wentworth Institute of Technology.

2.0 Uploading to WeBWork: Tutorial

Section 2.0 provides a step by step tutorial on how to add a problem to a homework set. This is done by first storing a file on a local server, locating the file, and finally adding it to a desired homework set. This tutorial will create a new homework set in the "MATH1850-Dummy" course called "Tutorial". To store the problems for the homework set, a local directory will be created called "tutorial_problems". After creating the homework set and local directory, a PG file called "template_PGML.pg" will be added to the directory and then to the homework set.

1. The user must go to the WeBWork website for the college which they have administrative privileges in. Since this document is written for Wentworth Institute of Technology (WIT), it will be using the WIT WeBWork page. To do so, navigate to the following web page (Figure 1).

Figure 1: WeBWork URL for WIT

2. The web page will bring the user to the WeBWork homepage for WIT. This page shows all courses hosted by the college. Navigate to the course that the homework problem is to

be added to. For this tutorial, the "MATH1850-Dummy" course is going to be used (Figure 2).

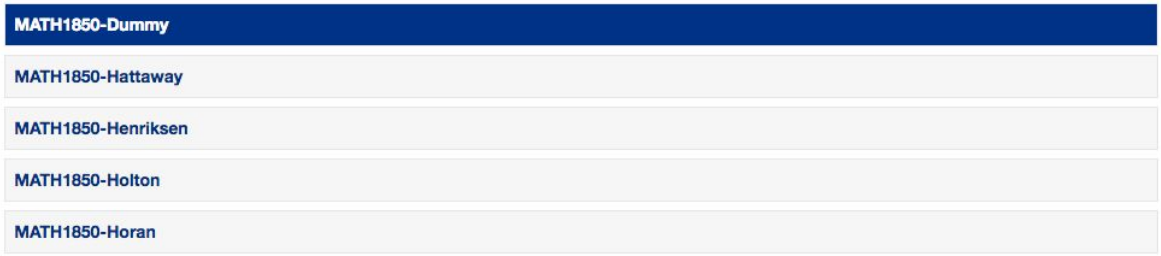

Figure 2: Selecting the Course

3. Once the course is selected, the user will be prompted to enter their credentials. If the user is not granted student or administrative privileges to the course, they will not be able to access the course's content. Enter your login credentials and press "Continue" (Figure 3).

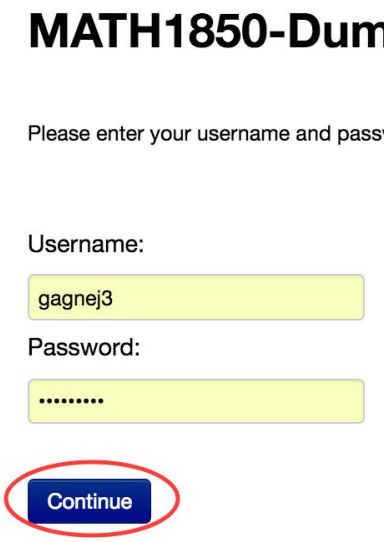

Figure 3: Login to WeBWork Account

4. Once signed into the course, all homework sets belonging to the course are displayed in the center of the screen. The main menu is displayed on the left hand side of the webpage. Locate the "Hmwk Sets Editor2" option in the main menu and click on it (Figure 4).

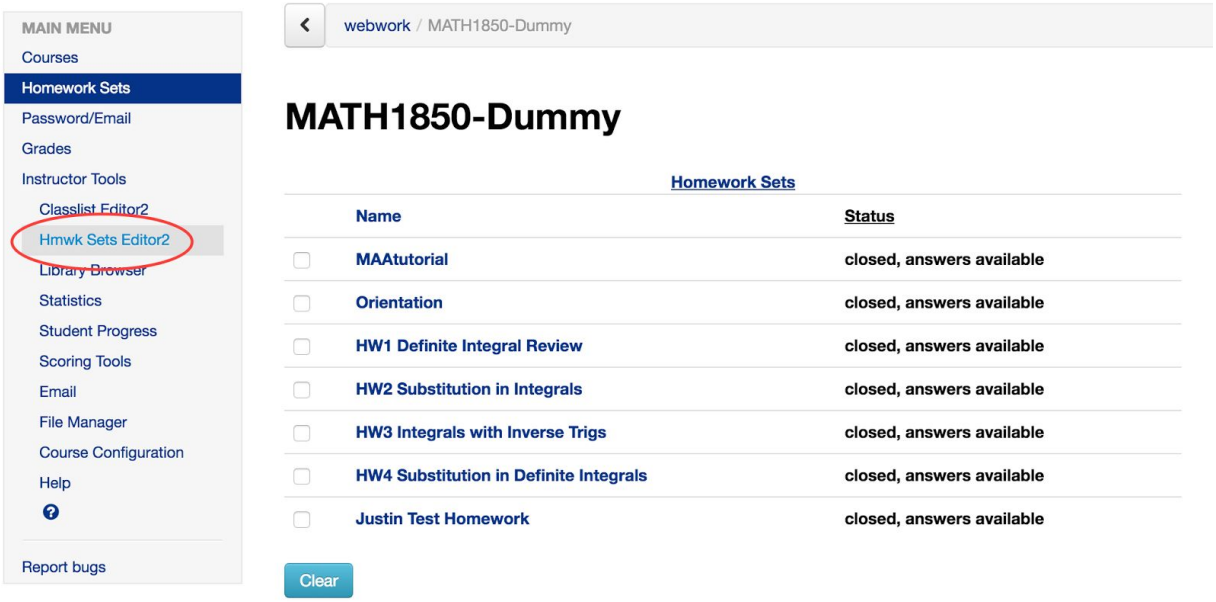

Figure 4: Navigate to the Hmwk Sets Editor2 Option

5. After selecting the "Hmwk Sets Editor2" option, the user will see a variety of options regarding the homework sets of the course. To create a new homework set, select the "Create" option (Figure 5).

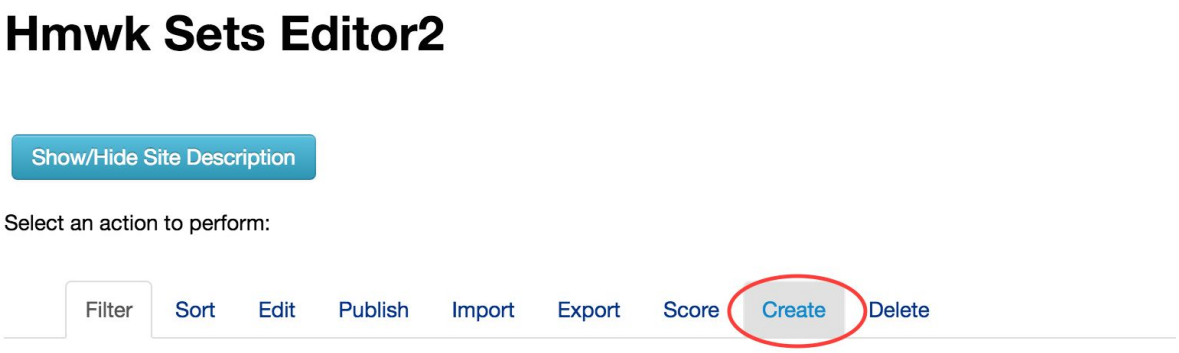

Figure 5: Create a Homework Set

6. After selecting "Create", enter the name of the new homework set. Create the set as "a new empty set" to make a blank homework set. Once the fields are set accordingly, select the "Take Action!" button to create the homework set (Figure 6).

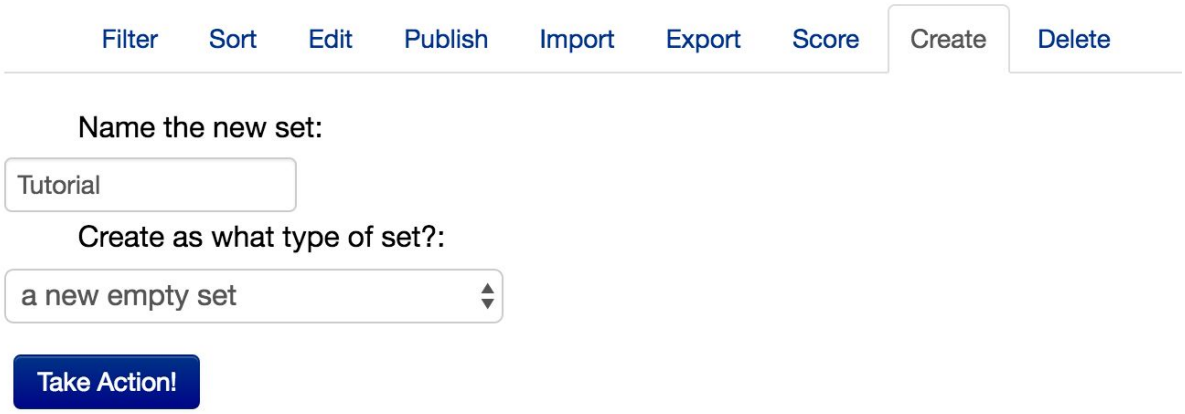

Figure 6: Creating the "Tutorial" Homework Set

7. After selecting to "Take Action!", there should be a new homework set titled "Tutorial" in the list of homework sets belonging to the course. The list of all homework sets are provided on the current webpage. Now that the "Tutorial" set has been created it can be seen in the list of assignments (Figure 7).

Set List

Edit Set Data	Edit Problems	Edit Assigned Users	Visible	Reduced Credit	Open Date	Due Date	Answer Date
MAAtutorial	17	7/7	Yes	No	01/10/1997 at 06:00am EST	01/01/2005 at 02:00am EST	01/01/2005 at 02:00am EST
HW1 Definite Integral Review	14	7/7	Yes	No	01/09/2015 at 02:50pm EST	01/12/2015 at 11:00am EST	01/12/2015 at 09:40pm EST
HW2 Substitution in Integrals	15	7/7	Yes	No	01/13/2015 at 02:57pm EST	01/16/2015 at 11:00am EST	01/16/2015 at 11:00am EST
HW3 Integrals with Inverse Trigs	9	7/7	Yes	No	01/16/2015 at 03:00pm EST	01/20/2015 at 11:00am EST	01/20/2015 at 11:00am EST
HW4 Substitution in Definite Integrals	6	7/7	Yes	No	01/16/2015 at 03:31pm EST	01/21/2015 at 11:00am EST	01/21/2015 at 11:00am EST
Orientation	15	7/7	Yes	No	06/26/2004 at 11:30am EDT	04/04/2015 at 12:20pm EDT	04/05/2015 at 12:00pm EDT
Justin Test Homework	13	1/7	Yes	No	04/21/2016 at 01:49pm EDT	06/30/2016 at 01:49pm EDT	06/30/2016 at 01:49pm EDT
Tutorial	0	1/7	Yes	No	08/01/2016 at 03:49pm EDT	08/08/2016 at 03:49pm EDT	08/08/2016 at 03:49pm EDT

Figure 7: Confirming Homework Set Creation

8. Now that a homework set has been added, problems can be added from either the WeBWork OPL or uploaded from a local device. In this tutorial, a problem will be added from a local device. To do so, there must be a known directory to store the desired files in the local server. To create a directory, navigate to the "File Manager" option in the Main Menu located on the left hand side of the screen.

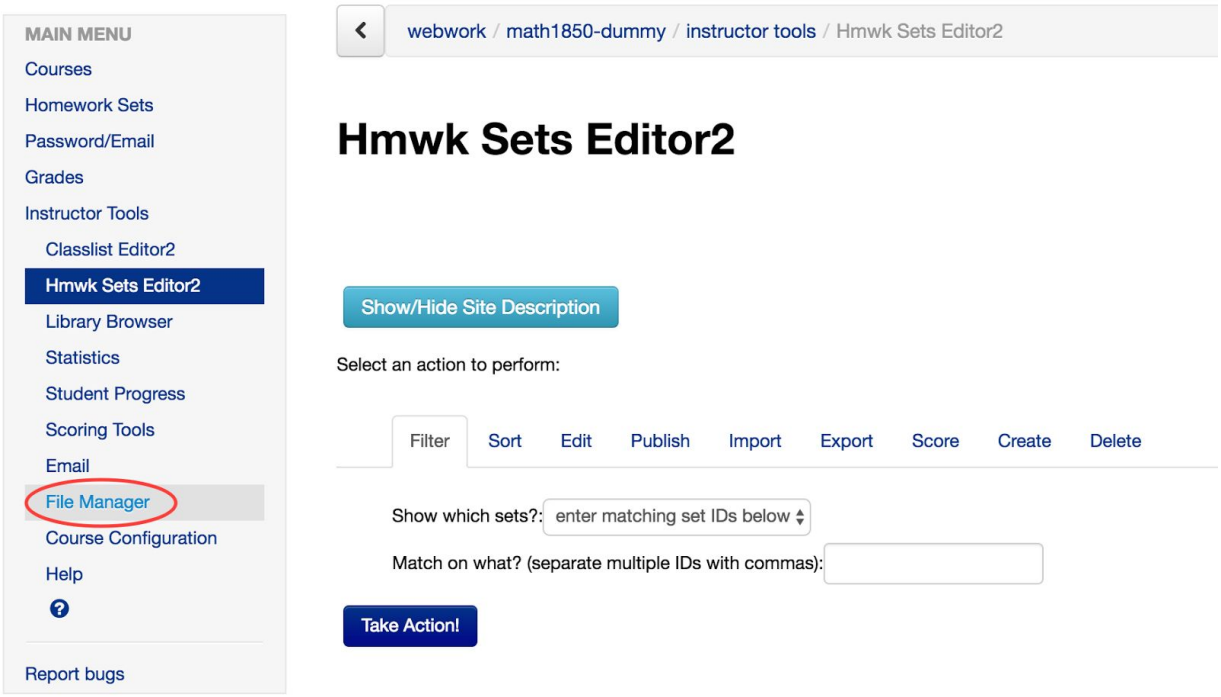

Figure 8: Locating the File Manager

9. After selecting the File Manager, all directories accessible from the course are displayed. To create a new directory, select the "New Folder" option.

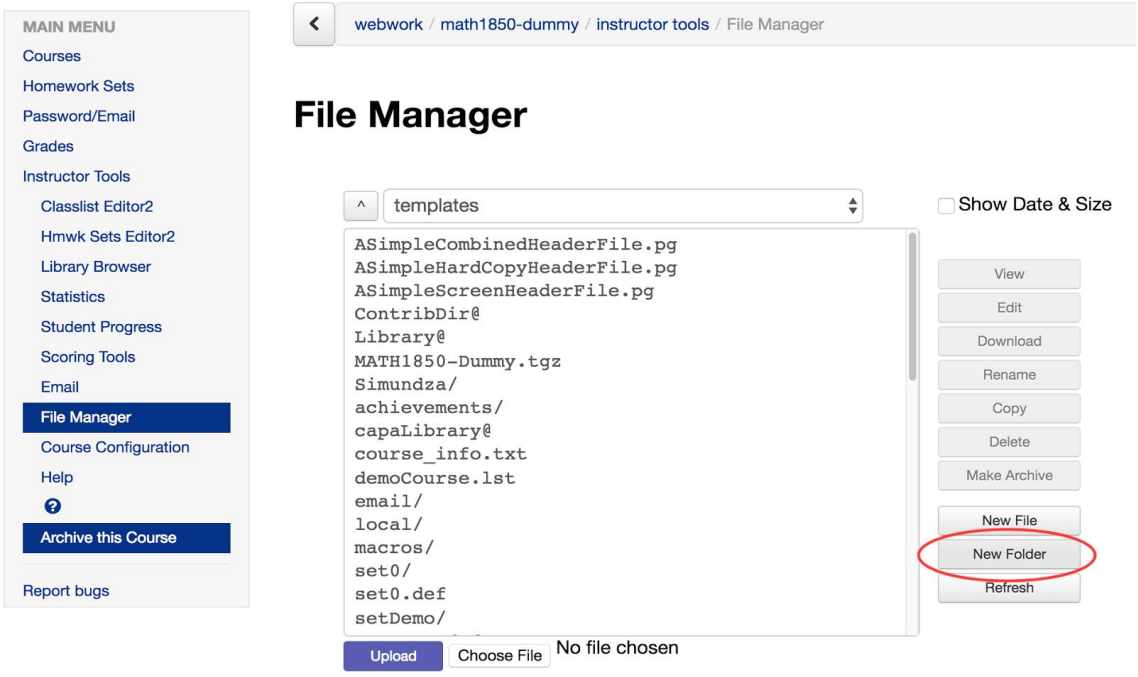

Figure 9: Select the New Folder Option

10. Enter the name of the new directory to be created in the course. Once the directory has been named, select the “New Folder” option.

Figure 10: Name the new Directory

11. After creating the directory, WeBWork will open the new empty directory. Select the “Choose File” option at the bottom of the page.

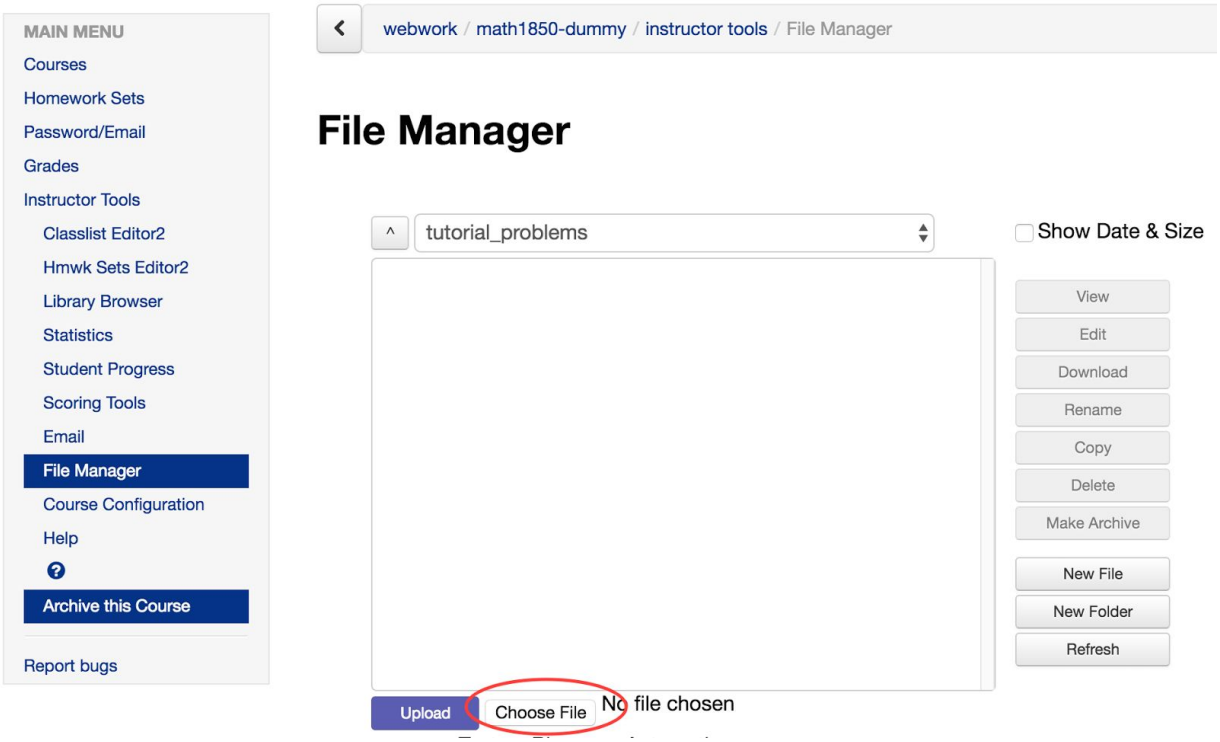

Figure 11: Selecting the File

12. After selecting the “Choose File” option, the web page will open the file directory on the user’s local device. Locate and select the file that is to be uploaded.

Figure 12: Select a PG File

13. After selecting a file, the web page should be updated to show the selected file. Make sure the file name on the web page is the same as the one desired. If the file name on WeBWork is not correct, repeat step 12. If the filename is the desired file, select the "Upload" option to add the problem to the new directory.

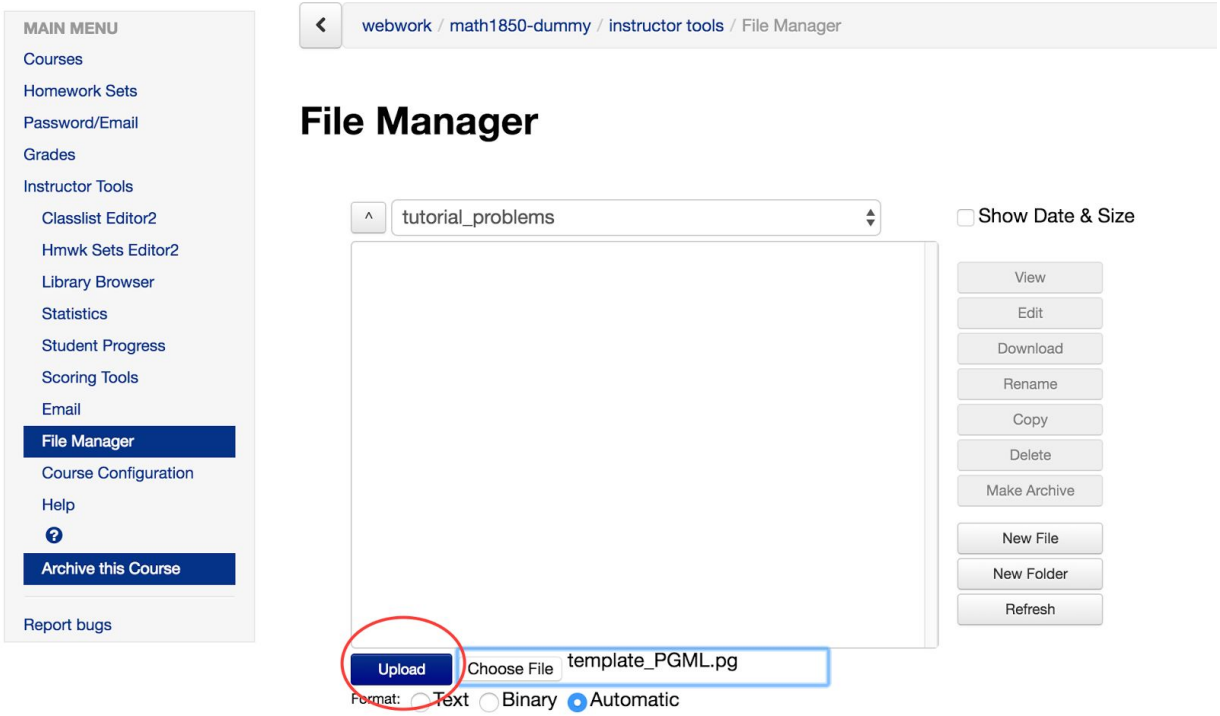

Figure 13: Upload the File

14. The PG file should now be visible in the "tutorial_problems" directory (Figure 14 next page).

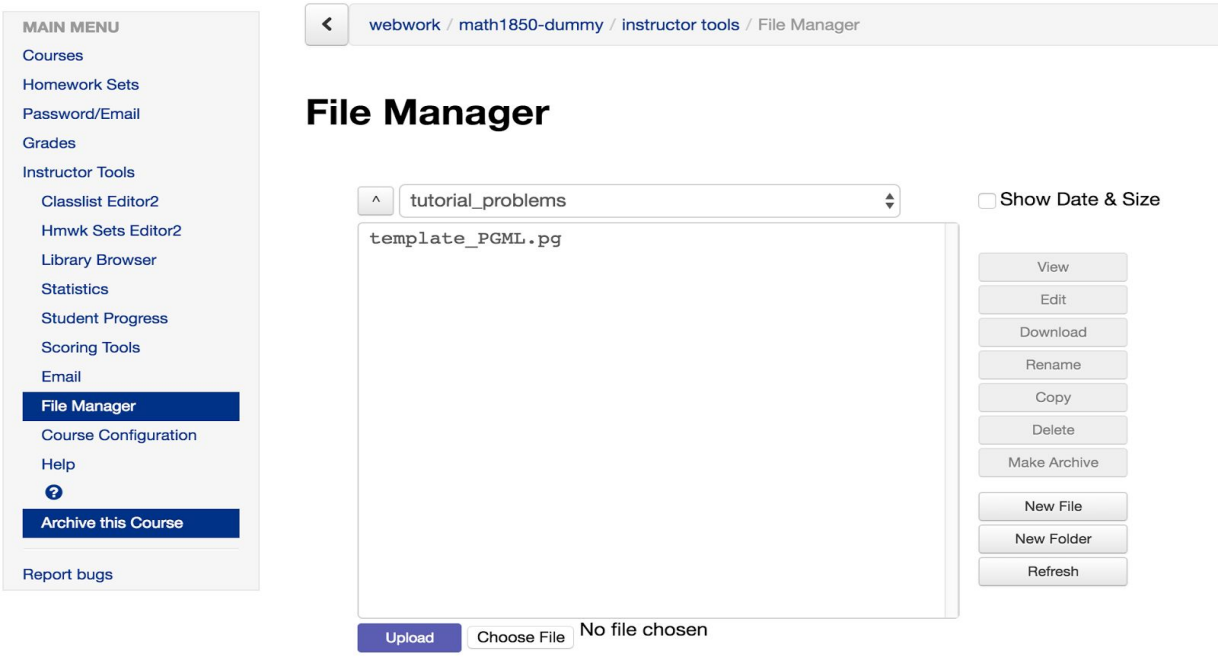

Figure 14: Confirming Successful Upload

15. In order to add the problem to a homework set, the relative path of the file must be obtained. To find the path, double click on the file name or select the desired file and then click “View” on the right-hand side of the file manager.

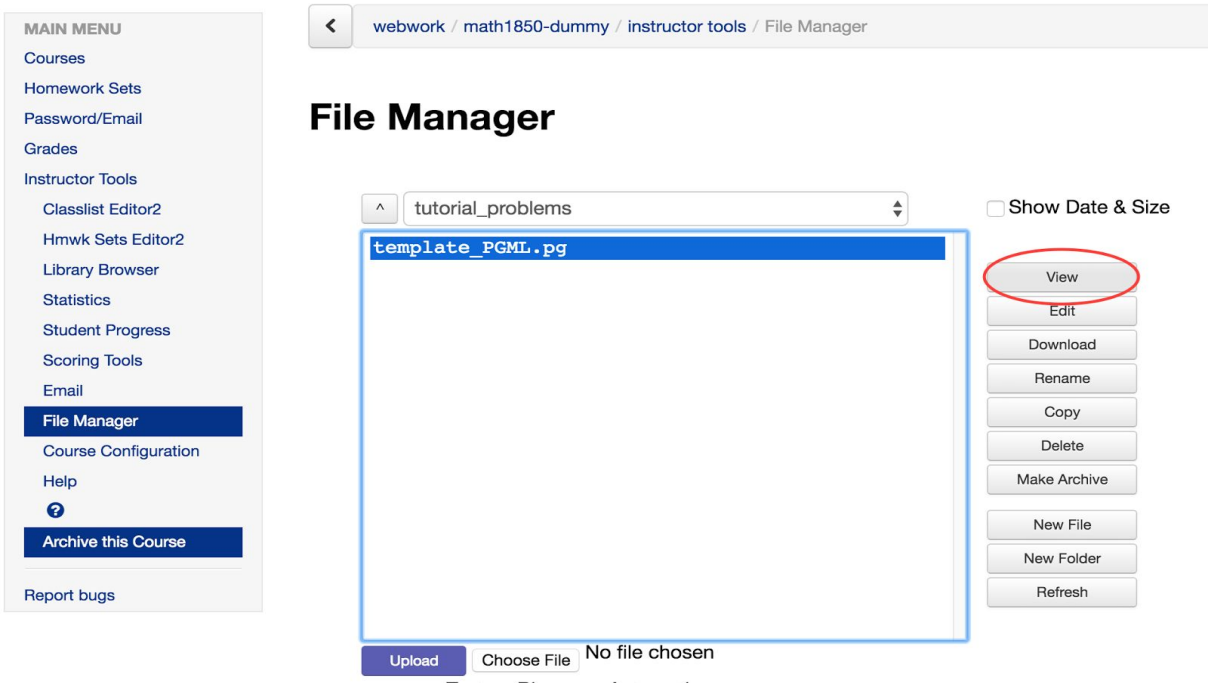

Figure 15: Viewing the Uploaded File

16. The file location of the file is shown at the top of the webpage. Highlight and copy everything after “templates/”. This path will be used to add the file to the homework set.

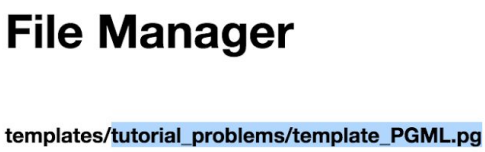

Figure 16: Getting the File Location

17. Now that the file location has been obtained, return to the homework sets editor by selecting the “Hmwk Sets Editor2” option in the main menu.

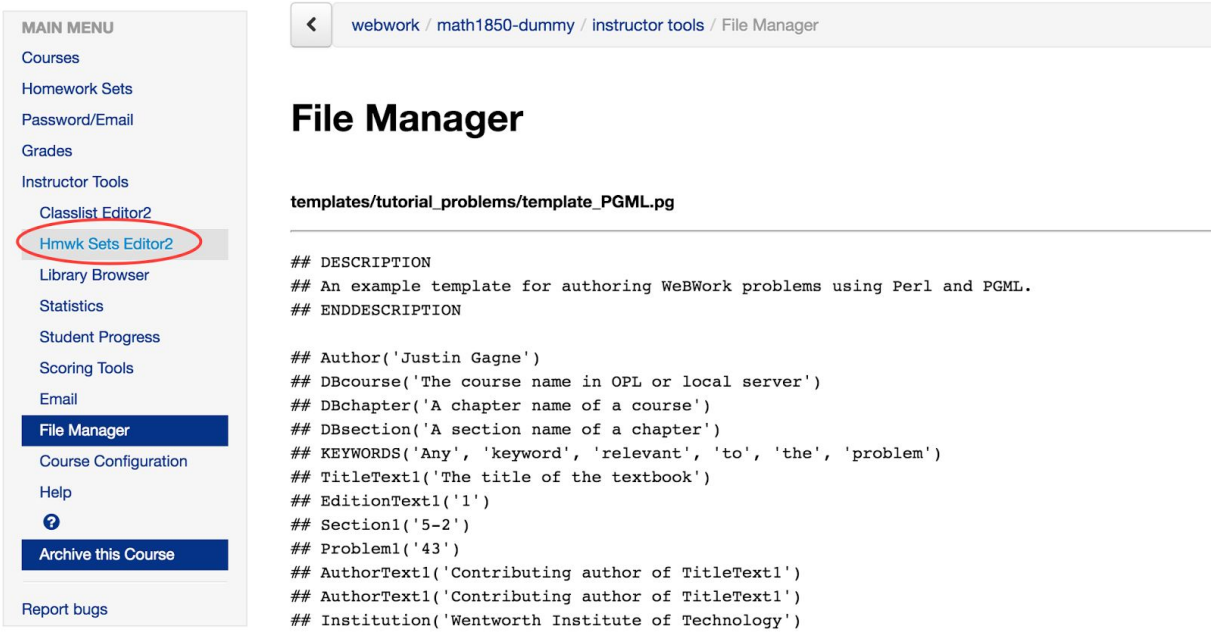

Figure 17: Returning to “Hmwk Sets Editor2”

18. Once in the Homework Sets Editor, select the number in the “Edit Problems” column for the Homework Set that the problem is to be added to (Figure 18 next page).

Edit Set Data	Edit Problems	Edit Assigned Users	Visible
MAAtutorial	17	7/7	Yes
HW1 Definite Integral Review	14	7/7	Yes
HW2 Substitution in Integrals	15	7/7	Yes
HW3 Integrals with Inverse Trigs	9	7/7	Yes
HW4 Substitution in Definite Integrals	6	7/7	Yes
Orientation	15	7/7	Yes
Justin Test Homework	13	1/7	Yes
Tutorial	0	1/7	Yes

Figure 18: Editing a Homework Set

19. Scroll to the bottom of the page and check off the box prompting to add a blank problem to the homework set. Select "Save Changes".

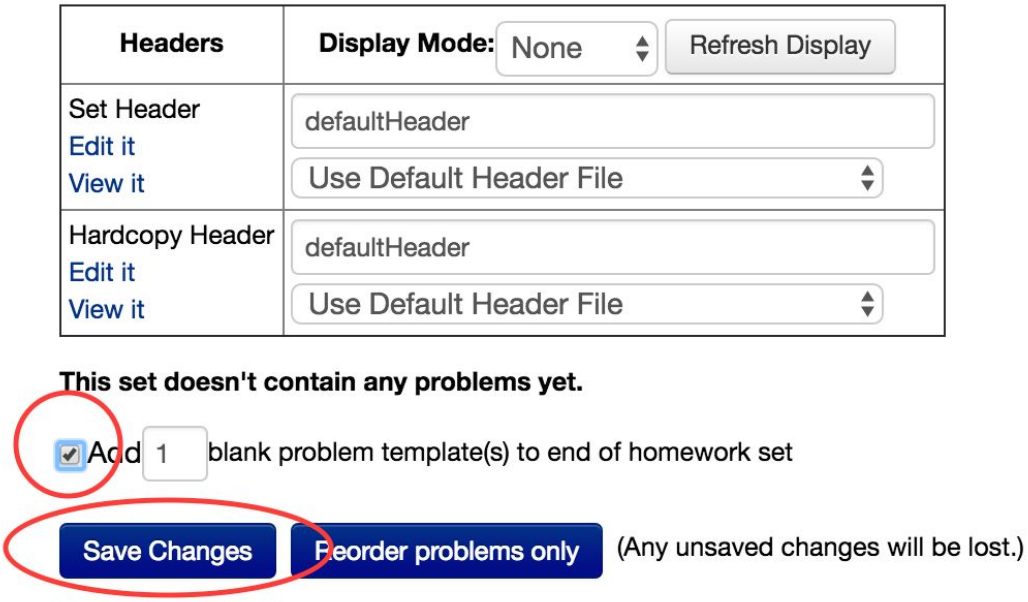

Figure 19: Adding a Blank Problem

20. The page should show that a new default problem has been added to the homework set.

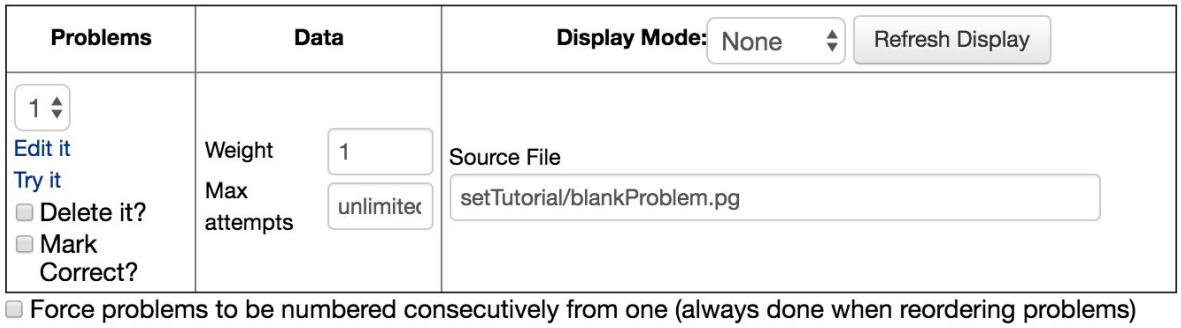

Figure 20: Default Problem

21. Delete the text in the default Source File address. Paste the file address that was copied in Step 16 in the Source File input field. Select "Save Changes" at the bottom of the page to update the homework set.

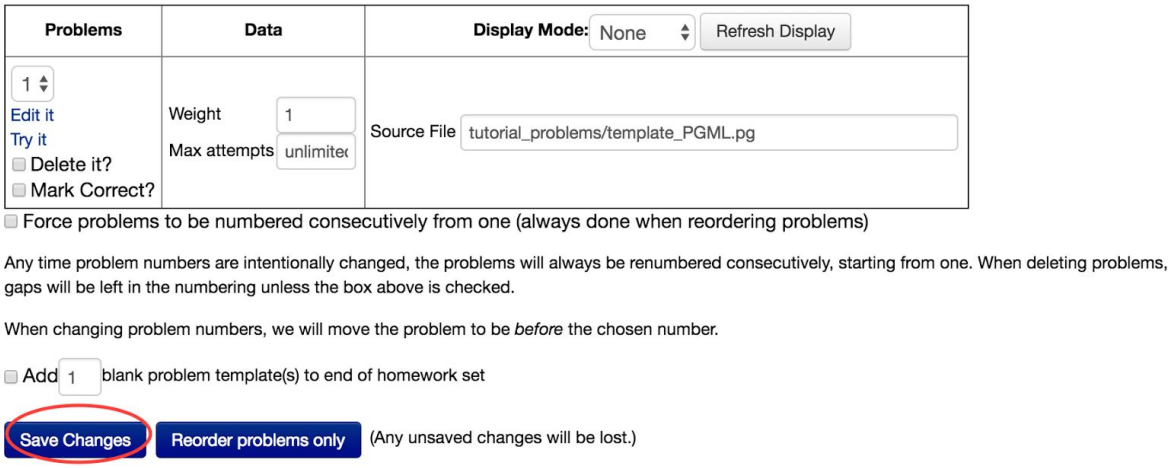

Figure 21: Adding a Problem to the Homework Set

22. The homework set is now updated with the custom problem stored on the local server. To make sure the problem added is the one desired, select the "Try it" option on the left of the problem. Make sure that the "templates/" part of the file's absolute path is not included in the path to the file. It will yield errors and the problem will not be found. Figure 22 shows a file that was added properly and Figure 23 shows the error that will occur if the previous steps have not been followed correctly (next page).

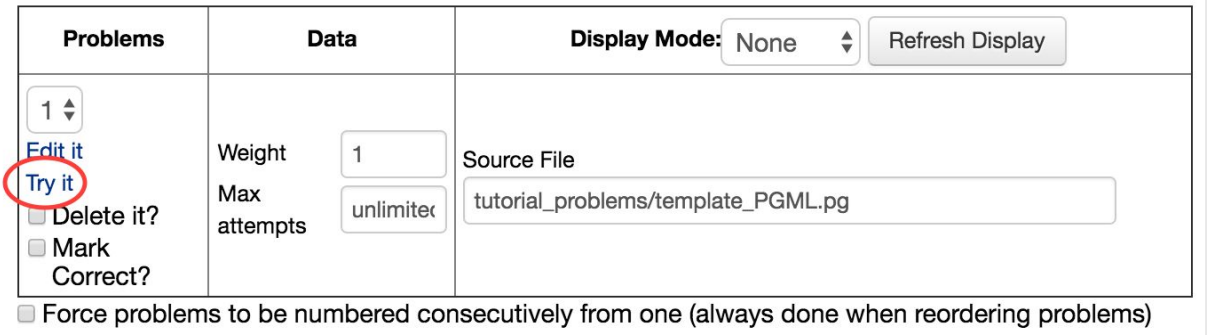

Figure 22: Opening the Problem

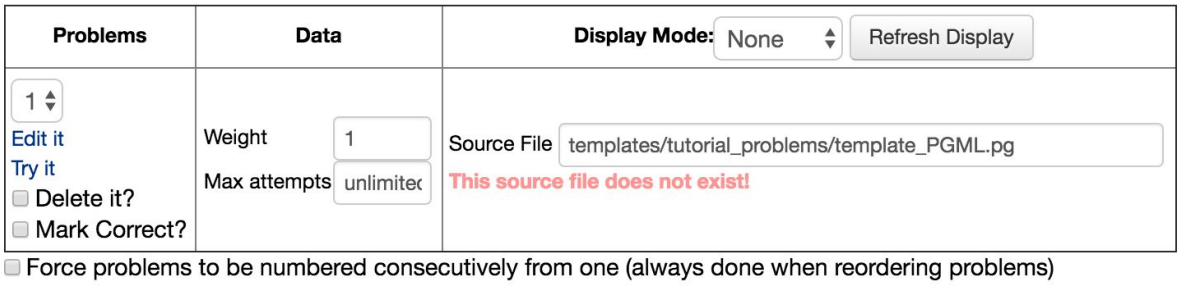

Figure 23: Incorrect File Path

23. Selecting the "Try it" option will open the problem in a new tab. Enter the solution(s) to the problem in the answer input field(s) ensure it is correct before assigning the problem to students. Once the answers are entered, press "Check Answers".

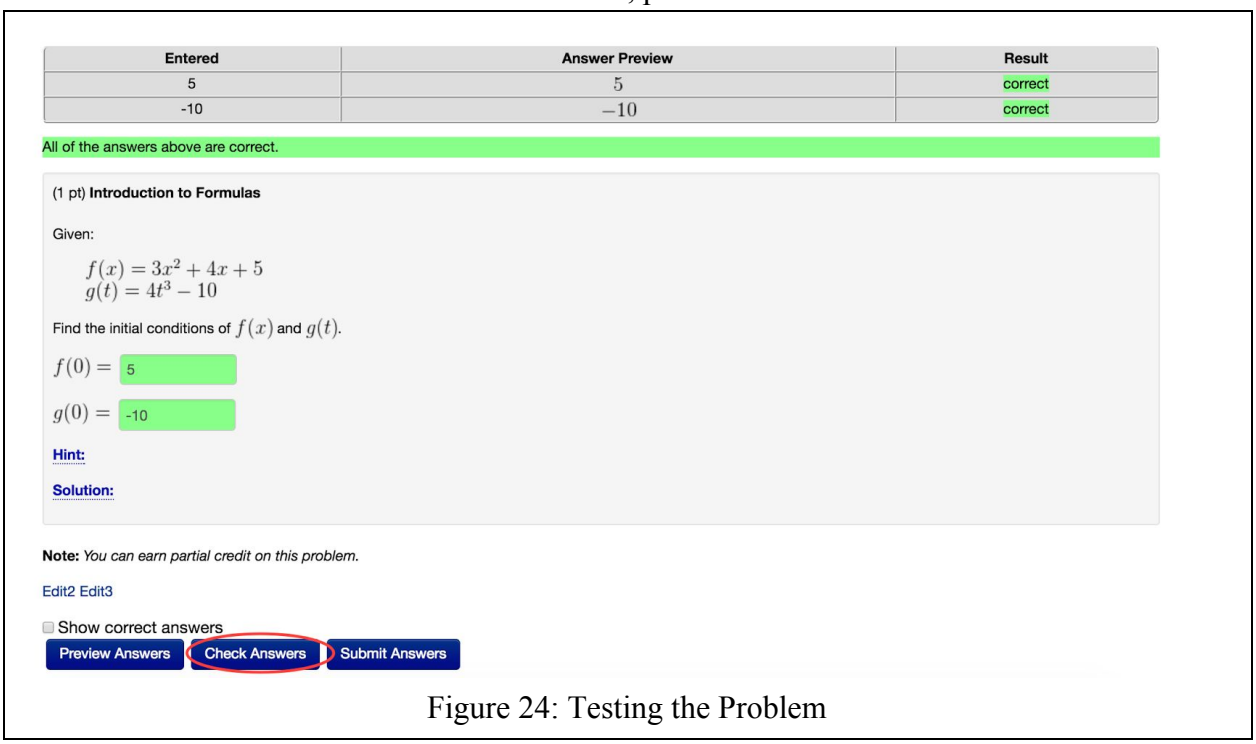

Figure 24: Testing the Problem

3.0 Debugging Errors on WeBWork

Given that WeBWork marks the entered answers correct or incorrect as expected, the problem is now ready to be used by students. If WeBWork is able to locate and open the problem but the file yields errors when opened, there is a problem in the source code of the PG file. Figure 25 shows a standard error displayed when a PG file contains errors.

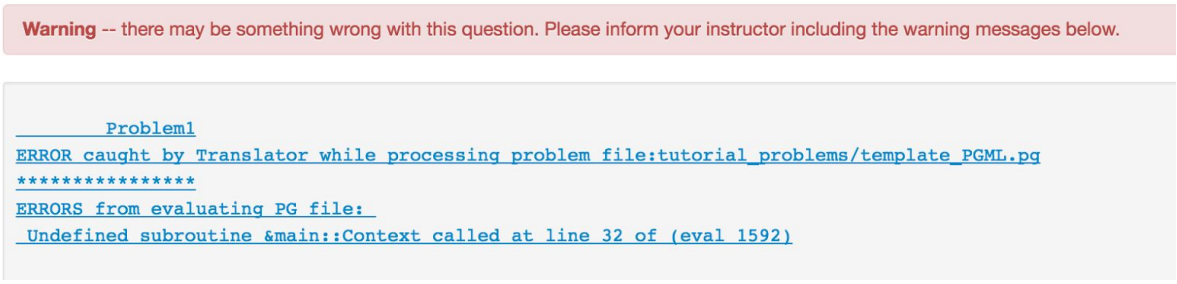

Figure 25: Debugging on WeBWork

When messages like the one in Figure 25 are shown, it is not necessary to upload the problem to WeBWork again as the problem lies in the source code. The author should look through the PG file saved on their local device and attempt to locate where the problem lies and fix the error. Once the code causing problems is believed to be fixed, navigate to the Hmwk Sets Editor2. From here, find the problem that was causing errors and select "Edit it".

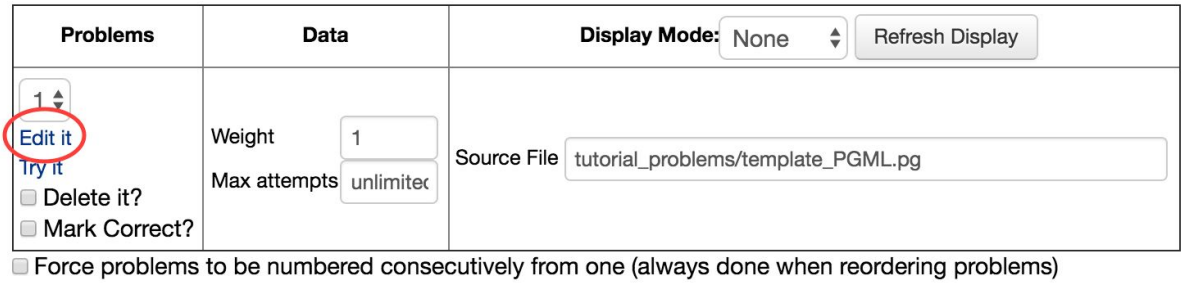

Figure 26: Editing a Local File

Selecting to edit the problem will open up the contents of the file stored on the local server and allow the user to edit the problem. Copy the updated code, and paste it into the file stored on the local server. Once the updated code has been added, select "Update" and then "Take Action!" to save the file (Figure 27 next page).

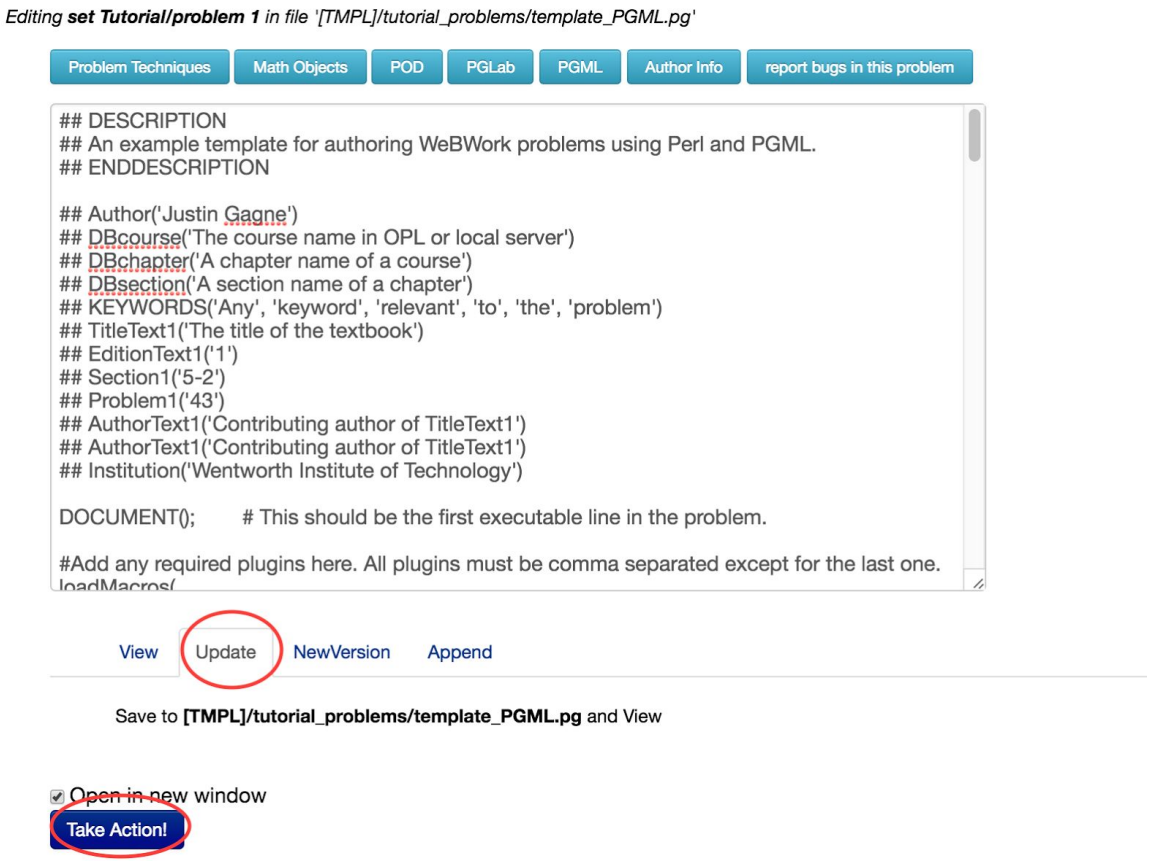

Figure 27: Updating File Contents on WeBWork

If the issue in the code has been fixed, the problem should be rendered on WeBWork as expected. Otherwise the author must continue debugging the code and updating the file until the correct output is shown. Figure 28 shows the expected output for the file.

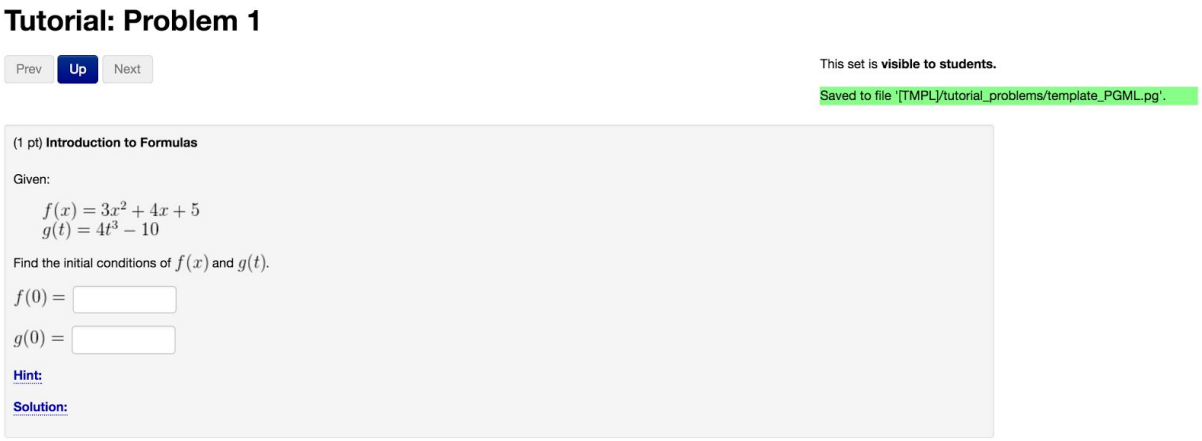

Figure 28: Checking for Correct PG Rendering