

Math 102 Spreadsheet Survey Analysis

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Number of respondents: 250

Total Number of Students: 588

Response Rate: 42.5%

The survey (Appendix 1) was offered November to December, 2012 to all Math 102 students. The intention was to evaluate the appropriateness of the WeBWork spreadsheet questions from the students' perspective. Below, I present some highlights. Most interesting are the following completion statistics:

	Never	Sometimes	Always
Q1. How often do you complete the spreadsheet problems?	46.6% (116)	43.8% (109)	9.6% (24)
Q2. How often do you use a spreadsheet to solve the spreadsheet problems?	46.0% (115)	42.4% (106)	11.6% (29)

Since a large portion of the class responded "Never" to the first question, much of the subsequent analysis will exclude this group. This group will be referred to as the *NeverGroup*.

For the second pair of questions, the aggregate responses are as follows.

	Much Less	Less	About the Same	More	Much More
Q3. How much time do you spend on the spreadsheet questions relative to the other WeBWork questions?	49.2% (123)	12.4% (31)	4.4% (11)	12.4% (31)	21.6% (54)
Q4. Relative to other WeBWork questions, how much have the spreadsheet questions helped your understanding of the concepts in this course?	62.2% (155)	22.5% (56)	12.0% (30)	2.4% (6)	0.8% (2)

Excluding the *NeverGroup* yields,

	Much Less	Less	About the Same	More	Much More
Q3. How much time do you spend on the spreadsheet questions relative to the other WeBWork questions?	21.8% (29)	19.5% (26)	6.8% (9)	21.8% (29)	30.1% (40)

Q4. Relative to other WeBWork questions, how much have the spreadsheet questions helped your understanding of the concepts in this course?	36.4% (48)	36.4% (48)	21.2% (28)	4.5% (6)	1.5% (2)
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The written responses are also revealing. In response to “How can the spreadsheet questions be improved?”

- Many of the students (56, or ~33% of those who commented) indicated that the spreadsheet questions could be improved by being removed from the course.
- The majority of the respondents suggest that the problems be made simpler, have clearer explanations, and be made more succinct:
 - “Make it more straightforward. Students can understand the question better rather than just feeling lost and giving up straight away.”
 - “remove the backstories, and make them less wordy. It is intimidating and often adds to the confusion of what to do.”
 - “less words. The huge paragraph to read confuses me and it is very intimidating.”
- Another suggestion from a few of the students is for the spreadsheet questions to be worth more.
 - “They're quite helpful but I think a lot of students neglect them since they are worth the same amount of points as other questions. I think if more emphasis was put on the spreadsheet questions, students would spend more time getting used to spreadsheet technicalities and learn more from these questions.”
- Few (12, or ~7%) indicated the spreadsheet problems are fine as they are.

The responses to the question, “Any other comments on the spreadsheet problems?” were quite negative and are best summed up by the following quote:

“I think the spreadsheet problems should be for bonus marks. They are just generally a lot more time consuming than other questions and many of my peers agree they are too much effort for one mark. Additionally, we as students aren't getting much out of it if half of us don't bother making the effort to try them and the other half struggle without learning much more than any other webwork question. We aren't allowed calculators on the exam so why practice questions that require us to use a calculation based program?”

Appendix 1: Survey Questions

WeBWork Survey

The following ten questions pertain to the spreadsheet questions on the WeBWork assignments.

1. How often do you complete the spreadsheet problems?
(never/sometimes/always)
2. How much time do you spend on the spreadsheet questions relative to the other WeBWork questions? (scale)
3. Relative to other WeBWork questions, how much have the spreadsheet questions helped your understanding of the concepts in this course? (scale)
4. How can the spreadsheet questions be improved? (free response)
5. What aspect of the spreadsheet questions is the most time consuming?
(free response)
6. How helpful are the spreadsheet resources (screen casts, etc.)? (scale)
7. Are you learning useful skills that are applicable to subjects other than calculus?
8. What other resources do you use for the spreadsheet questions (e.g. graphing calculator, online graphing tools etc.)?
9. What proportion of time do you use a spreadsheet to solve the spreadsheet problems?
10. Any other comments on the spreadsheet problems? (free response)

Appendix 2: Raw Survey Responses

Answer the following.

	Never	Sometimes	Always
How often do you complete the spreadsheet problems?	46.6% (116)	43.8% (109)	9.6% (24)
How often do you use a spreadsheet to solve the spreadsheet problems?	46.0% (115)	42.4% (106)	11.6% (29)

Answer the following.

	Much Less	Less	About the Same	More	Much More
How much time do you spend on the spreadsheet questions relative to the other WeBWork questions?	49.2% (123)	12.4% (31)	4.4% (11)	12.4% (31)	21.6% (54)
Relative to other WeBWork questions, how much have the spreadsheet questions helped your understanding of the concepts in this course?	62.2% (155)	22.5% (56)	12.0% (30)	2.4% (6)	0.8% (2)

How helpful are the spreadsheet resources (screen casts, etc.)?

Response	Count	Percent
Not helpful	58	23.3%
Somewhat helpful	75	30.1%
Helpful	76	30.5%
I haven't used the resources	40	16.1%

If you did not find the resources helpful, please provide some comments on how to make them helpful.

(No comments)

Are the spreadsheet questions helping you learn useful skills that are applicable to subjects other than calculus?

Response	Count	Percent
No	107	42.8%
Yes	143	57.2%

What aspects of the spreadsheet questions are the most time consuming?

	Not time consuming	Somewhat time consuming	Very time consuming
Spreadsheet technicalities	4.8% (12)	22.9% (57)	72.3% (180)
Figuring out what the question is asking	8.9% (22)	40.7% (101)	50.4% (125)
Figuring out how to solve the problem	7.3% (18)	34.3% (85)	58.5% (145)
Satisfying WeBWork's accuracy requirement	20.2% (50)	37.5% (93)	42.3% (105)

What other resources do you use for the spreadsheet questions (e.g. graphing calculator, online graphing tools etc.)?

Graphing Calculator, Excel, Desmos Graphing
Graphing calculator, online graphing tools
graphing calculator, Geogebra, Desmos
Desmos and Wolfram.
none
Online graphing tools

desmos
Just excel
online tools
graphing calculator
-online graphing calculator
graphing calculators
graphing calculator to understand the equations better
Graphing calculator and wolfram alpha
Graphing calculator
Online graphing tools
Graphing calculator
None.
nothing
graphing calculators.
graphing calculator
Graphing calculator.
I use the course notes to help me understand what the spreadsheet questions are asking for
Pen/Paper
graphing calculator
Desmos Graphing Calculator
I don't do them.
online graphing calculator, piazza discussion
Calculator
website like wolfram
Sometimes graphing calculator and online graphing tools.
I use online graphing tools and graphing calculator.
Asides from using Excel, I do not use other resources for the spreadsheet questions.
None.
Not applicable
Graphing calculator, Piazza, Desmos.
I do not use any other resources for spreadsheet problems. The only resource I use is MS Excel. On rare occasions

Graphing calculator, scientific calculator
Graphing calculator, desmos
calculator, wolfram alpha
My graphing calculator and online tools (such as desmos)
online graphing tools
Wolfram Alpha
1. Graphing calculator 2. Calculator 3. Lots of paper
I didn't do them.
Calculators and online graphing tools.
Excel, calculators, online graphing tools
graphing calculator/ desmos calculator
None
excel
Graphing calculator, wolfram alpha.
Nothing
graphing calculator, excel
Graphing calculator
I used a graphing calculator.
Excel
Wolfram Alpha.
Graphing calculator
I just use excel
Graphing calculator (occasionally)
mostly graphing calculator and wolfram
graphing calc
Wolfram Alpha, Graphing calculator, my friends
Nothing
Office Exel
none
I use Microsoft Excel
graphic calculator
I don't use other resources for the spreadsheet questions.
www.desmos.com/calculator

online graphing tools
graphing calculator. online graphing tools such as desmos.
graphing calculator
Graphing calculator
Desmos Graphing Calculator
Graphing Calculator
wolfram. my cheating calculator.(graphing calc) desdom.
Excel. graphing calculator
Graphing calculators
None other than the screencasts
calculator
graphing calculator
excel
Graphing calculator
n/a
Piazza
online graphing calculator
online graphing calculator
Excel Spreadsheet, Desmo Graphing Calculator
google
Desmos, graphing calc
Graphing Calculator
Wolfram
n/a
Wolfram Alpha, calculator
graphing calculator, wolfram alpha
Graphing calculator, piazza, and help from tutor.
Desmos Online Graphing calculator to confirm results.
excel
Piazza, graphing calculator, wolfram.
graphing calculator, wolfram alpha
graphing calculator
Graphing calculator

ONLINE GRAPHING TOOLS
Graphing calculator
The online graphing program and calculator provided by Desmos was the main resource used.
online calculators like WolframAlpha as well as comparing methods with other people
wolfram alpha
online graphing tools such as desmos/calculator
online graphing tools
graphing calculator, excel
None
Online graphing calculator
n/a
none
online graphing
Desmos and graphing calculator
graphing calculator
graphing calculator, online derivative calculator
Graphing Calculator, WolframAlpha
none
i dont do the spreadsheet questions
i dont do the spreadsheet questions
Graphcalc
graphing calculator & online graphing tools
None. I skip the questions because they're useless.
None.
Graphing calculator
online graphing tools
Online graphing tools
graphing calculator, friends,
graphing calculator, desmos, by hand
I use an online graphing tool.
Excel
graphing calculator, wolfram alpha

graphing calculator.
none
None
calculator
Graphing calculator, online graphers
Graphing calculator, wolfram alpha
Graphing calculator
Graphing Calculator, Wolfram Alpha
Graphing Calculator
I don't... Sorry
graphing calculator
graphing calculator
graphic calculator
none
wolfram and graphing calculator
graphing calculator and also computer graphing programs
graphing calculator
graphing calculator
online graphing calculator
Newtons method
Wolfram Alpha
desmos, wolfram
graphing calc, excel
graphing calculator and graphing tools
Graphing calculator, Excel
Graphing calculator
wolfram alpha, online graphing tools
online graphing tools
I used online graphing tools, my own calculator and I find going to the math labs really helps.
Wolfram Alpha, Desmos Online Graphing Calculator
piazza
calculator
online graphing tools

desmos
Graphing calculator, online graphing tools
online graphing (desmos)
Graphing calculator
wolfram
Online Graphing Tools
Graphing calculator
desmos
When I do try it, I usually try graphing calculator and online graphing websites.
desmos
graphing calculator
I've done some earlier spreadsheet questions but I go on Youtube for tutorials or ask classmates for help.
graphing calculator, online graphing sources,
For spreadsheet questions, I often use online graphing tools.
online graphing tool
I don't try the spreadsheet questions at all
Graphing calculator
graphing calculator.
none
Graphing Calculator, Wolfphram
screen casts
Wolfram Alpha
Wolfram Alpha
I sometimes use a graphing calculator.
Wolfram Alpha?
GDC, excel
sometimes a graphing calculator or an online calculator, but it usually doesn't work either way.
I do not attempt the spreadsheet questions.
I dont do them because it takes too long
graphing calculator
Online graphing

Graphing calculator wolfram alpha
graphing calc
Wolfram Alpha, Graphing Calculator
Graphing tools.
I use Desmos.
For the one I did I used excel.
I dont do them
Desmos

How can the spreadsheet questions be improved?

They're good questions -- but I suppose most people are too lazy to use a program to approximate values. Some problems require very precise values which may make some students give up early.
More screencasts related to the spreadsheets would be helpful.
Explanation of scenario can be clearer
Make them more simple.
get rid of them
Most of them take really long, and I can't be bothered to do it for one mark.
They can be taken away. They are too confusing and I do not know how it could help us prepare for an exam since we can't do a spreadsheet problem on an exam.
nope
by being gone
-perhaps go over some of them in class
The spreadsheet questions are hard to understand. More guidance can be given to allow students to complete the spreadsheet problems.
Count as more points so that more people will do. Since it worths only 1 point i think majority of people don't do it.
They shouldn't be included
By making them less time consuming
Remove them or make them extremely easy
Make them simpler in the beginning... students should be able to work up their skills.
more clear in what the question is asking and what to do

More tips on how to design the spreadsheet.
By presenting more straightforward explanations and instructions, instead of explaining all the background.
Having the lab for the course be focused on solving the spreadsheet problem, with an always available T.A.
I think there shouldn't be a spreadsheet question because it has little to do with understanding the concept and more on learning to use excel
I personally think the spreadsheet questions are quite well developed. Most are of moderate difficulty and DO pertain to what we're doing in class. So I have no real suggestions for improvement.
They look good to me.
I think they are fine.
I don't do them. I do not see how they are relevant in this class.
more clarity
I never did a spreadsheet question because I never understood how to use it
be more related to what we leaned in class
Giving examples of how to solve the problems.
N/A
Nothing in particular.
Not applicable
I think they are fine.
I don't think spreadsheet problems should be a part of Webwork unless there's a way in which our understanding of Calculus is being measured through the spreadsheet problem.
Make questions easier to understand and state some useful functions (e.g. linest).
make the questions more understandable
I would have more spreadsheet questions, but way shorter and simpler
Please for god's sake, give out more tips, or make a guide to finishing those problems. Also make them optional, so then the guide wont be giving out free marks.
go over spreadsheet techniques at the beginning of the year break them down into components, sometimes they are very overwhelming
They should be removed.

Reduce the amount of words. Give equations that have fewer variables. For example don't give $y = Ax^b + N(1 - cx)$ and then say where A is 2, b is 3, N is 4, c is 5. But just say $y = 2x^3 + 4(1 - 5x)$.

I think rather than having spreadsheet problems we should have an extra webwork, I find the spreadsheet questions irrelevant because we don't use excel in our lectures or in exams.

I honestly don't do them. I don't really know what they're asking me to do, it was never entirely clarified for me, and they really just don't seem relevant/necessary for the rest of the coursework.

Make it more straightforward. Students can understand the question better rather than just feeling lost and giving up straight away.

The questions are often very hard to grasp at first.

by removing them

Remove it

Spreadsheet questions are difficult and time consuming and should not be a part of this course.

Get rid of them

Make it a bit easier to figure out what to do?

Get rid of them

I found the spreadsheet questions were hard to understand what exactly we were supposed to be finding. The accuracy component was very difficult as well.

Remove them

Copyable plain-text.. Typing in those equations takes waaaaaaaay too long.

Make them less time consuming because we have other courses to worry about.

Their relative value compared to the value of other questions on the Webwork is not worth the time required to interpret and solve the problems

I'm really not sure about how they can be improved...

be removed

Exhausting your attempts to show a step by step guide.

Get rid of them?

give specific direction on solving the problem

less spreadsheet problems.

I think there should be a mandatory class where we need to get informed about the skills related to spreadsheet questions.

I dont think theyre necessary
The questions could be more clear as to what it wants us to find. Also I am not that familiar with the excel program, so it would be helpful if there were more guidelines on how to use the program to solve the problem.
It would be nice if a chart of the technical terms in spreadsheet be given. (e.g. EXP())
remove the backstories, and make them less wordy. It is intimidating and often adds to the confusion of what to do.
They could take less time. As they are only worth 1 mark, it does not make sense to spend over an hour trying to figure out the questions. Especially as we are not tested in any other way on them(exam/OSH)
The background information looks scary. If we can make the question short and clear(like normal webwork question), it will be great!
Less complicated, and less time consuming.
give more of them
Make it simpler and easier to understand.
I did the spreadsheet problems the first time for the second assignment, and it took me a total of 3 hours. Considering how time consuming this was (understanding what was being asked, sorting out the technicalities in the lab hours, etc.) I never did them after that.
As a person who has very little background knowledge with excel and spreadsheets, I would have liked it if there was an instructional video on getting used to the new program. I found that the although the videos posted about the spreadsheets did help me solve the problem, I did not understand what was going on and would not have been able to replicate the work by myself.
?
should not be so complicated
not have them
Make them less difficult and decrease accuracy required
include a step by step walk through for 50% point pentalty
Don't use them because they don't apply to anything we do on the tests and are just time consuming! Or make them worth more because that would give me incentive to do them.
better instructions
better instructions
remove them
They can't be

Do not have spreadsheet questions next year.
More clear instructions I find it hard to know how to use the spreadsheet to solve the problems
Do not include them in the assignments.
by being eliminated
by being eliminated
Get rid of them. I did them up until the first midterm and I stopped after that because I realized I did not learn anything from them and they were not helpful in preparing me for the midterm nor helping me better understand the material. They were at most helpful in making me better at excel but other than that a huge waste of time in regards to calculus.
Using excel should be taught in more detail.
give us the hints, otherwise it is too time-consuming on doing it.
A few lectures dedicated to solving the problems in the spreadsheet or similar problems so the class get an example of what to do at times.
Have more problems focused on the concepts of the material students are learning and have less repetition in some problems. i.e. spreadsheet problems involving summation of more than 10 terms.
Remove them
Less arduous
The spreadsheet problems are found to be quite satisfactory and do not necessarily have to be changed to a large degree.
More screencasts of similar problems would help
less time consuming...however the pencast does help!
I dont know
more explanation on how to set it up
remove them
If they were worth more points, I would have been more motivated to spend the time on them. Since they were worth only 1 point, I didn't usually bother, as it wasn't worth the amount of time that I had to put into them.
It is easier to understand if instructions are given step by step.
go over basic concept in class.
using knowledge
dont put it out
giving more points for these questions, otherwise, they don't seem

worth the time
shorter question
maybe post a similar example/videocast
They are fine :)
do not add them
i dont do the spreadsheet questions
i dont do the spreadsheet questions
Just don't include them, I don't find that they serve any purpose other than getting a computer to compute numbers for you
before asking question provide a video teaching us how to use the technology
They shouldn't be in the curriculum to begin with. There is no point of doing a spreadsheet problem if our exams have nothing to do with spreadsheets. Its a complete waste of time and should be removed.
They're quite helpful but I think a lot of students neglect them since they are worth the same amount of points as other questions. I think if more emphasis was put on the spreadsheet questions, studets would spend more time getting used to spreadsheet technicalities and learn more from these questions.
I think an OSH based on spreadsheet would help.
Make them shorter or easier to read. Also, they should be more relevant to what we go over in class.
should be explained in class
If a question is more easily solved with an online graphing tool, it may not be helpful to have it as a spreadsheet question. Spreadsheet questions are good if they are the most efficient way for solving a certain problem (eg.NLC)
I gave up on them after the first one or two.. because the marks they were worth weren't worth the time it took to actually complete the problem..
Listing any common errors students are having to troubleshoot faster instead of waiting for responses on Piazza
It would help if it was easier and shown in class.
by being removed.
I'm not a fan of them. I'd don't think they should be a part of WebWork assignments.
don't have them
I don't have excel

make them easier to understand (wording)
Don't include spreadsheet problems.
It would be great to have a step by step procedure that walks you through exactly what to do for the question. It is hard to figure out where to start and the numbers can get very confusing to put into a spreadsheet/ calculator.
Make them worth more compared to other WeBWorK questions; they develop useful skills but are often not worth the time they take. It would be nice to have added motivation.
Better relation to tested questions
Not sure. The way it has to be worked out in excel and excel is confusing to use.
Well I guess if they didn't exist it would be an improvement. I don't feel they are necessary for what we are learning.
by having clearer instructions
question is too long and complicated to understand, although the solution is not that difficult
The questions could be more direct
I don't do them
For those that want to learn spreadsheet, TAs should be able to step by step explain how to do spreadsheet problems. I attended the first math lab but TAs could not help me figure out the spreadsheet problems.
Make webwork less picky
by removing them hahah I'm sry they're just too time consuming
They're annoying to do, not worth the time for only one mark. They don't prepare me for tests or finals id rather use that time to study.
By teaching them properly
Make them worth more. I don't do them precisely because they are only worth 1 mark.
be explained more clearly, more examples in class
Made more directly related and straightforward to the material covered in class
Nothing. They are great.
less time consuming, more directly relevant to types of questions we'd get on the midterms.
The precision range could be wider
Questions should be more straightforward

more details
I don't think they need improvement
Clearer wording on the problems, maybe less variables/constants.
Instructions and hints can be stated write on the question
Simpler?
make them easier
making the questions simpler and easier.
N/A
Relate to the subject matter more clearly.
The spreadsheet questions could be a bit more concise.
should be easier in difficulty
By being more clear and requiring less extra resources outside webwork (using excel is very inconvenient).
Give more hints
Screencasts and in-class help is sufficient enough
It might be good practice for students learning to use spreadsheet to incorporate spreadsheet questions as part of their OSH. Although at first this might be more challenging, students would quickly learn how to use this tool and make the understanding of future problems much easier.
Less verbose - a lot of the time the question isn't nearly as challenging as it's made to seem by the preamble.
They should be shorter problems that help gain a more clear understanding of the concepts instead of making it more confusing.
More concise screencasts done for a similar problem, just with different values.
less words. the huge paragraph to read confuses me and it is very intimidating.
Remove them completely from the course.
not having them
not have it
Just get rid if them
By being removed
Remove them.
Better guidelines on how to do them, steps to take.
Make them more clear.

They need to require less knowledge of Microsoft Excel or other graphing programs.
Make it more about the question and less about how you do the question.
eliminate them
just get rid of it

Any other comments on the spreadsheet problems?

None -- they're usually quite straightforward and well-written.
N/A
They are quite interesting =]
No.
they're pointless
n/a
I don't find them worth my time. Time is of the essence. Especially as a student.
nope
they are a waste of time
They are difficult in general.
I never though excel was this useful to solve certain problems.
I have never done spreadsheet problems
I think the spreadsheet problems should be for bonus marks. They are just generally a lot more time consuming than other questions and many of my peers agree they are too much effort for one mark. Additionally, we as students aren't getting much out of it if half of us don't bother making the effort to try them and the other half struggle without learning much more than any other webwork question. We aren't allowed calculators on the exam so why practice questions that require us to use a calculation based program?
I would have liked if we spent a few minutes going over the basics of spreadsheet problems in class in the beginning of the term.
They are useless and a waste of time. Please remove them
n/a
They are very time consuming.
No

It was time consuming and not helpful
Most of the time, the problem is well laid out. Its more an issue of time. When I have other work to do, I can't be bothered to toggle with excel for an extended period of time for one mark.
I feel maybe we should have more screen casts explaining how to work the spreadsheet.
Nope.
sometimes we aren't sure what method to use or if what we are doing is right
I think it is not helpful
no
Spreadsheet problems should have unlimited chances or once every other week or even as a bonus question for an extra point.
Make it worth more marks so that it will be worthwhile to do (it is worth one mark, with other assignments/quizzes to do I do not think it is worth it sometimes).
I didn't find them helpful or worth the amount of time required to complete them.
Not really useful
No comment
None
N/A
Those question did look fun and intriguing at first, but they actually take massive amounts of time to finish. Maybe reinstate the lab component of the course, so then there are TAs and peer help available. Maybe 1-3 spreadsheet questions per lab session?
difficult
They're really a waste of time.
I think something more helpful could be given instead of spreadsheet questions.
Again, connecting their significance to the rest of the classroom material. I've really just never seen the connection, and they were never really emphasized as a critical part of the course.
It's too hard and I personally think I don't learn anything from it even though I manage to get a few correct.
n/a
Nope
too hard sometimes

I have honestly lost so many marks just because I haven't done the spreadsheet problems. The first one I tried took me 6 hours that I didn't even complete or get right.
No
Doesn't seem as important as webwork or osh problems because they aren't on exams.
No
The spreadsheet problems were often very frustrating, as I personally did not learn much from them, and spent most of my time trying to figure out what to do, and then still not getting the right answer.
no
I think they should just be removed in general, nobody does them anyways.
Remove them
N/A
none
Spreadsheet problems were hard and very time consuming. Almost impossible sometimes.
The spreadsheet problems are incredibly time consuming and not helpful to understand the mathematical concepts. It often confuses people even more, I didn't find it helpful at all
To much work for so little mark.
should make the spreadsheet problems as bonus question
It was very time consuming.
I don't think the spreadsheet question is helpful. I think it is just time consuming questions.
I found them especially difficult because I came into the course with only the very basic excel skills so it was hard to learn not only what the questions was asking for but how excel could help me to answer the question.
They are very time consuming, and confusing at times.
I don't think we should have them at all - they were not helpful and were only time consuming.
Some questions required 2 variables and it was hard to think of a method that could adjust the two variables at the same time. (this is when the slider in desmos helped)
They are more trouble than they are worth.
Thanks to everyone who made these awesome questions:). Although

some of these questions actually made me sad and angry...
make them harder
No.
We haven't had the opportunity to take courses on excel yet, so I think it is unreasonable to include these questions for each set, especially considering how time consuming they are - it took me a total of 3 hours to do 2 of them.
N/A
It's fun but not really helpful with the things we learn
not useful
no
n/a
I am bad at using excel and my math grade suffers because of it :(
Please get rid of them
No.
I don't find them helpful in learning as we are never tested on questions like the spreadsheet problems
They are useless because they do not help me understand a math concept. Also, there are no questions on midterms/finals that are spreadsheet problems, so they are not useful practice either. They should not be included in assignments.
they are not, or do not seem applicable to prescribed content, and do not significantly aid mathematical learning.
they are not, or do not seem applicable to prescribed content, and do not significantly aid mathematical learning.
Get rid of them, seriously.
Unfortunately I chose not to complete the spreadsheet problems as they often required a substantial more amount of effort per mark rewarded. In other words, the optima of my marks received versus time invested was found when the number of spreadsheet problems solved was zero ;)
They are very useful to efficiently learn the application of concepts, but setting up the spreadsheet is time consuming.
No
Most of the time the spreadsheet problems be too difficult and time consuming to solve, due to the problem own difficulty and many technical difficulties that would occur. So it would be nice if all the spreadsheet problems are due at a later date than the date the webwork is due.

Aside from being more time consuming on average, I do not often find the spreadsheet problems to help me understand the concepts of the problems any more than regular webwork problems.

They are a detriment to learning

no.

I did all of the spreadsheets and I feel like the most helpful thing that I learned was how to use excel commands and formulas. Sometimes it was helpful to further grasp a concept, but most of the time it was just extra time spent on nothing.

I dislike them.

no

nope

none

no

no

no

None.

i rarely did them

i dont do the spreadsheet questions

i dont do the spreadsheet questions

/

It's very time-consuming.

They're not helpful and no one understands a calculus problem anymore after doing a spreadsheet problem.

No.

Generally, I felt that the spreadsheet problems were too time consuming to be worth only 1 mark on WebWork. Thus, many times, I just didn't have the "push" to do them. An OSH question based on spreadsheet would solve this problem.

they're too difficult

I learned how to use excel due to the spreadsheet problems which is good. However, most of the time, I just plug in whatever is given in the resource tips and the equations given so I don't feel like I learn the concepts by doing these problems.

If I'd stuck with the spreadsheet questions and answered them each week, I probably would have found them beneficial and they probably would have gotten less and less time consuming, and I would have improved my excel skills.. so I guess I wish I had done them.. but not

really.
It's not necessary
They aren't worth enough marks for the time that they require to do them.
They were so time consuming and worth so little that I didn't bother with them at all, so I found them completely useless.
None.
i never understand them
n/a
I don't think spreadsheet questions should be included in webwork. The time it takes to use the software needed for technically inept people is too much.
It is useful to a certain extent. Many students complete it because they want to get the marks but they spend hours and hours doing it. Some realize that the spreadsheet questions are not worth a lot so they don't put in the effort. These are just some things to consider. Perhaps making the spreadsheet questions worth more would be a great incentive for students to try it.
Provide demonstrations on how to use excel.
NA
The only big issue with the spreadsheet problems for me was figuring out how to use excel to do them properly. It was very time consuming to watch the screen casts and go back to the question and try and figure out what to do. So I feel that students should either somehow be taught how to use excel for these types of problems or you should totally get rid of the spreadsheet problems. Most people only did them in the first two weeks or so of the course and then stopped when they figured that they are not going to see anything of such sort on the exams.
none
none
The spreadsheet problems are quite helpful in terms of learning new ways to solve problems and also helps in understanding the concepts better. I didn't do them during the term because it took too much of my time but I would definitely try them out sometime later.
nope
nope
i hate spreadsheet problems I probably only ever did one.
The amount of effort for each spreadsheet question in relation to the amount of marks they are worth makes it so that most students, such

as myself, simply skip the question.
Make them worth more. I don't do them precisely because they are only worth 1 mark.
Nothing.
they are kind of a pain to do, but once i got them, i will be very satisfied and thrilled that i got the answer.
They're very difficult and time-consuming
Dr. Eric Cytrynbaum is great at making the spreadsheet supplementary video materials! He's really clear and has an effective teaching style. I hope he continues to help future M102 students via piazza and videos.
too hard
I think they should be taught in class
N/A
They take up too much time and do not really help improve my understanding of the course
Didn't really have time to do them.
N/A
Maybe it was only me, but sometimes it was hard for me to find the connection between the spreadsheet problems and the subject matter.
Try explaining how to do spreadsheet problems in class for a couple of minutes, but other than that, they are okay.
They seem unnecessary and hard.
More time for the questions because compare to other classes, math 102 has the most questions.
N/A
I believe the resources for creating and setting the spreadsheet problems were very well done. My issues were personal, spending much more time on the webwork questions and not leaving enough time for the spreadsheet problems.
No.
I believe they could be more helpful if they took less time.
Take out spreadsheets completely. They won't be on the exams anyways because we aren't allowed excel or a calculator of any kind anyways.
/
omit them

They are a waste of time

Please no more

They aren't useful.

Make them worth way more than one point.

No.

I think they're somewhat pointless

please get rid of them