## BCC WEBWORK GUIDE FOR STUDENTS

### DEPARTMENT OF MATH AND COMPUTER SCIENCE

## 1. How to Use Webwork to do HW

- (1) Find a computer with Internet access. If you do not have computer with internet access, you can find one on campus. There are 16 computer labs located throughout the campus which are equipped with networked microcomputers. All of the labs have Internet access. Check out the appendix for the computer lab locations.
- (2) Log into WeBWorK:
  - Open a browser and input the URL: http://wwm01.bcc.cuny.edu/webwork2
  - Find your course (by course number and your professor's name) and click on it Be careful your professor may have two different classes or sections so please make sure to click on the right one. Bookmark it or save the URL somewhere. Google "How to bookmark URLs" if you do not know how.
  - Your username is your BCC OSSES ID. It is the part of your BCC email address that comes before '@stu.bcc.cuny.edu' and is usually your first name and dot followed by your last name. This is not necessarily the username you use to sign into CUNYFirst! For example, if your e-mail is "fstname.lstname@stu.bcc.cuny.edu", your username for WebWork is "fstname.lstname". All letters in the username should be in lower-case. If you have numbers in your email address, they should be included too. For example if your email is "amy.smith01@stu.bcc.cuny.edu", then your username is "amy.smith01" Your password is your BCC OSSES password. If you do not have a BCC account, you can visit the Helpdesk in Colston Hall room 806 to obtain a user account and password. Please do not change password through Webwork!
  - Enter your login name and password. If your login is not correct, you will be told so, and you can try to log in again If your login doesn't work, talk to your instructor.
- (3) After you log into WeBWorK you will get to the main page, which looks similar to the following:

🖗 WeBWorK	MAA MATHEMATICAL ASSOCIATION OF	AMERICA		
MAIN MENU Courses	webwork / MTH05_Demo_10			
Homework Sets	MTH05_Demo_10			
Oradaa			Homework Sets	<u>8</u>
Instructor Tools	Name	Test Score	Test Date	Status
Classlist Editor2 Hmwk Sets Editor2	HW1-Review of Fractions			now open, due 02/02/2014 at 11:00pm EST
Library Browser Statistics	MTH05FinalPracticeProblems			will open on 02/28/2014 at 11:00pm EST
Student Progress Scoring Tools	HW0-Orientation			closed, answers recently available
Email File Manager	Take MTH05SampleFinal test			will open on 02/28/2014 at 11:00pm EST
Course Configuration Help	Clear			
2	Download PDF or TeX Hardcopy for	Selected Sets		
Report bugs	Email instructor			

The problem sets will be labeled OPEN or CLOSED. OPEN means you can work on the set and it can count towards your grade. CLOSED means that the set is not open and you can not work on it. If the problem set is past the due date, you should be able to click on the problem set and view the solutions.

(4) Select a problem set by clicking on it. For example you will see the following:

WeBWork	MAA MATHEMATICAL A	SSOCIATION OF AMERICA			
MAIN MENU	webwork / MTH05_D	emo_10			
Homework Sets Password/Email	MTH05_Dem	10_10			
Grades			Home	work Sets	
UIQUES	Name	click on this	Test Score	Test Date	Status
	HW1-Review of Fra	actions			now open, due 02/02/2014 at 11:00pm EST
	MTH05FinalPr	racticeProblems			will open on 02/28/2014 at 11:00pm EST
	HW0-Orientation				closed, answers recently available
	MTH05SampleFinal tes	st			will open on 02/28/2014 at 11:00pm EST
	Clear				
	Download PDF or TeX	Hardcopy for Selected Sets			
	Email instructor				

(5) Then you can now begin doing the problem (by clicking on the problem).

WeBWorK	MAA MATHEMATICAL	ASSOCIATION OF AMERICA			
MAIN MENU Courses Homework Sets	webwork / mth05_d	emo_10 / HW1-Review_of_Fraction	s		
HW1-Review of Fractions Password/Email Grades			Problems		
Sets	Name	Attempts	Remaining	Worth	Status
HW0-Orientation	Problem 1	0	unlimited	1	0%
MTH05FinalPracticeProblems	Problem 2	0	unlimited	1	0%
Display Options	Problem 3	0	unlimited	1	0%
View equations as: • images	Problem 4	0	unlimited	1	0%
_ jsMath _ MathJax	Problem 5	0	unlimited	1	0%
LaTeXMathML	Problem 6	0	unlimited	1	0%
	Problem 7	0	unlimited	1	0%

🖗 WeBWorK	MAA MATHEMATICAL ASSOCIATION OF AMERICA
MAIN MENU	webwork / mth05_demo_10 / hw1-review_of_fractions / 1
Courses	
Homework Sets	HW1-Review of Fractions: Problem 1
HW1-Review of Fractions	
Problem 1	Prev Up Next
Password/Email	
Grades	(1 pt) Replace the letters with natural numbers so that the resulting equations are true. $1  A  6  C  18$
Problems	$\overline{2} = \overline{4} = \overline{B} = \overline{22} = \overline{D}$
Problem 1	A =
Problem 2	B =
Problem 3	
Problem 4	6=
Problem 5	D =
Problem 6	Note: You can earn partial credit on this problem.
Problem 7	
Problem 8	Preview Answers Submit Answers
Problem 9	You have attempted this problem 0 times.
Problem 10	You have unlimited attempts remaining.
Display Options	Email instructor

Work out the problem, input your answers (refer to "How to Enter Answers in Webwork" in the appendix), you can preview your answers:

1 pt) Replace the letters wit	th natural numbers so that the resulting equations are true	
<u>1</u>	$-\frac{A}{C} - \frac{6}{C} - \frac{C}{18}$	
2	$\begin{array}{c} - & - & - & - & - & 2 \\ 4 & - & B & - & 22 & D \end{array}$	
	A = 2	
	B = 12	
preview your answers	C = 11	
pefore you submit	$D = 36 \pi$	
te: You can earn partial cre	edit on this problem.	
Denvious Contract		

After you onfirm with your answers, you can submit them for grading:

# HW1-Review of Fractions: Problem 1

Prev Up Next

PREVIEW ONLY -- ANSWERS NOT RECORDED

Entered	Answer Preview
2	2
12	12
11	11
36	36

(1 pt) Replace the le	tters with natural nu $\frac{1}{2} = \frac{A}{4} =$	umbers so that the resulting equations are true. $= \frac{6}{B} = \frac{C}{22} = \frac{18}{D}$					
	A =	2					
	B =	12					
	C =	11					
	D =	36 submit your answers					
Note: You can earn partial credit on this problem.							
Preview Answers	Submit Answers						

After you submit your answers, you will see if it is correct or not right away. Now you can fix the problem if there is any mistake and repeat the above steps. You can also move to the next problem or get back to the problem list:

Prev Up Next go to next problem						
Entered		Answer Preview	Result			
back to 2		2	correct			
problems 12		12	correct			
11		11	correct			
36		36	correct			

# HW1-Review of Fractions: Problem 1

#### All of the answers above are correct.



Note: You can earn partial credit on this problem.

Preview Answers Submit Answers

You now can see you scores by click on "Grades" in the menu on the left.

WeBWork	MAA MATHEMATICAL ASSOCIATION	N OF AME	RICA													
MAIN MENU Courses Homework Sets Password/Email	webwork / mth05_demo_10 / C	Grades														
Grades	Set Score Out Of Problems															
1	This is your sco	ore		1	2	3	4	5	6	7	8	9	10	11	12	13
click on this	HW0-Orientation	0.00	0		,		C r	nea	ins	Co	rre	ct				
you will see the grades as shown in the right	HW1-Review of Fractions	1.00	10	c* 0	.0	0	Ø	0	Ø	0	Ø	0	Ø			
	MTH05FinalPracticeProblems	0.00	34	0	0	Ø	Ø	0	Ø	0	Ø	Ø	0	• 0	0	0

After you submit your homework, you do not need to email your instructor this info. Webwork will keep track of your score. Correct answers will be released after the due date. Please note that as a security measure, if you are logged on to WeBWorK for longer than 30 minutes without any activity, you will be asked to log in again. Your previous work will be saved. Note that "Download a hardcopy of this problem set." is also an option – you may download the hardcopy, print it out and come back to input answers on WebWork – as shown in the following pictures.



Email instructor

- 2. What to do if you have problems with WeBWorK:
- If you have a problem logging in, check whether your bcc account password has expired and contact the Helpdesk at Colston 806.
- If you have questions on specific homework problems or if you have comments about WeBWorK that you think can help us make WeBWorK better, click on the 'Email

Instructor' button

on any of the pages of WeBWorK.

# How to Enter Answers in WeBWorK

Addition	+	a+b gives $a+b$
Subtraction	-	a-b gives $a-b$
Multiplication	*	a*b gives ab

Multiplication may also be indicated by a space or juxtaposition, such as 2x, 2x, 2\*x, or 2(x+y).

Division	/	
		a/b gives $\frac{a}{b}$
Exponents	<b>^</b> or <b>**</b>	a^b gives $a^b$ as does a**b
Parentheses, brackets, etc		(), [], {}

# Syntax for entering expressions

- Be careful entering expressions just as you would be careful entering expressions in a calculator.
- Sometimes using the \* symbol to indicate multiplication makes things easier to read. For example (1+2)\*(3+4) and (1+2)(3+4) are both valid. So are 3\*4 and 3 4 (3 space 4, not 34) but using an explicit multiplication symbol makes things clearer.
- Use parentheses (), brackets [], and curly braces {} to make your meaning clear.
- Do not enter 2/4+5 (which is  $5^{1/2}$ ) when you really want 2/(4+5) (which is 2/9).
- Do not enter 2/3\*4 (which is 8/3) when you really want 2/(3\*4) (which is 2/12).
- Entering big quotients with square brackets, **e.g**. [1+2+3+4]/[5+6+7+8], is a good practice.
- Be careful when entering functions. It is always good practice to use parentheses when entering functions. Write sin(t) instead of sint or sin t. WeBWorK has been programmed to accept sin t or even sint to mean sin(t). But sin 2t is really sin(2)t, i.e. (sin(2))\*t. Be careful.
- Be careful entering powers of trigonometric, and other, functions. You write (sin(t))^2 for the square of sin(*t*), and *never* sin^2t.
- For example for the expression  $2+3\sin^2(4x)$ ,  $2+3\sin^2(4x)$  is wrong. You should enter:  $2+3*(\sin(4*x))^2$ . Why does the last expression work?

# Please Excuse My Dear Aunt Sally

Operations in parentheses are always done first (4\*x) and then (sin(4\*x))], next all exponents are taken, giving  $(sin(4*x))^2$ , next all multiplications and divisions are performed, giving  $3*(sin(4*x))^2$ . Finally, all additions and subtractions are performed, giving  $2+3*(sin(4*x))^2$ .

Remember that multiplication and division have the same precedence and there are no universal rules as to which should be done first in the **absence** of parentheses. WeBWorK and many computers read things from left to right, so 2/3\*4 means (2/3)\*4=8/3. But some other computers will read 2/3\*4 as 2/(3\*4)=1/6. The same lack of consistent rules concerns powers, expressions like  $2^3^4$ .

The only way to insure that you are entering what you want to enter is the use of parentheses!!!

- Use the Preview Button to see exactly how your entry appears to the system. For example, to tell the difference between 1+2/3+4 and [1+2]/[3+4] click the Preview Button.
- If a problem calls for a decimal answer, give at least four decimal digits, or as many as the problem specifies. For example, write 2.3453 instead of 2.34.

# Intervals in WeBWorK

What is the domain of  $f(x) = \sqrt{x}$ ? One answer is  $x \ge 0$  (*x* is greater than or equal to 0). The best way to enter this in WeBWorK is by using interval notation: [0,infinity].

Other intervals:

(2,3] is the set  $2 < x \le 3$ .

(-infinity,5) is the set x < 5.

(-infinity, infinity) is the set of all real numbers.

(2,3]U[4,5) is the set  $\{2 < x \le 3 \text{ or } 4 \le x < 5\}$ . (This is a union of two intervals and can be very important.)

# Mathematical Constants Available In WeBWorK

pi This gives  $\pi \approx 3.14159265358979$ . So cos(pi) is -1.

e This gives  $e \approx 2.718281828459045$ . So,  $\ln(e^2)$  is  $1 + \ln(2)$ 

# Scientific Notation Available In WeBWorK

2.1E2 gives 210

2.1E-2 gives 0.021

aEb gives  $a \times 10^{b}$ 

# Cube roots and *n*th Roots

x^(1/3) gives  $\sqrt[3]{x}$ , the cube root of x

 $x^{(1/n)}$  gives  $\sqrt[n]{x}$ , the *n*th root of *x* 

x^(p/q) gives  $\left(\sqrt[q]{x}\right)^p$ 

# Mathematical Functions Available In WeBWorK

- abs() |x|, the absolute value
- cos() the cosine function. Note: the cosine function uses radian measure
- sin() the sine function. Note: the sine function uses radian measure
- tan() the tangent function. Note: the tangent function uses radian measure
- sec() the secant function. Note: the secant function uses radian measure and

$$\sec(x) = \frac{1}{\cos(x)}$$

exp() the exponential function,  $e^x$ 

- log() The natural logarithm function. Note that this is NOT the common log function from pre-fact $(n) = n(n-1)(n-2)\cdots(3)(2)(1)$  calculus.
- ln() Another, more common name for the natural logarithm,  $\ln(x)$
- logten() The common logarithm or log base 10,  $\log_{10}(x)$
- arcsin() The inverse sine function. asin() is another name for arcsine.
- arccos() The inverse cosine function. acos() is another name for arccosine.
- arctan() The inverse tangent function. atan() is another name for arctangent.
- sqrt() The square root function

sgn() The sign function 
$$-\operatorname{sgn}(x) = \begin{cases} -1 & \text{if } x < 0 \\ 0 & \text{if } x = 0 \\ 1 & \text{if } x > 0 \end{cases}$$

- step() The step function step(x) =  $\begin{cases} 0 & x < 0 \\ 1 & x \ge 0 \end{cases}$  (0 if x < 0, 1 if x >= 0)
- fact() The factorial function (defined only for non-negative integers), fact(n) = (n)(n - 1)(n - 2)...(3)(2)(1)



#### **Computer Facilities**

Academic Computing consists of 16 computer labs located throughout the campus which are equipped with networked microcomputers. All of the labs have Internet access.

# The following computer labs are setup with COMWEB

<u>ME 201 ME 224 ME 302</u> <u>ME 318 ME 320 ME 328</u> <u>ME G16</u> The following computer labs are equipped with wireless connectivity <u>ME 329 RBSC 308 RBSC 309</u>

Listed below are the locations, supervisors (day/eve) and telephone numbers of the computer labs. Roscoe Brown Center 308 Roscoe Brown 309 New Hall 23

WIRELESS!

MS WINDOWS

Malik Le-Gare

Lab Supervisor(s):

Roscoe Brown Center 308 WIRELESS! MAC OSX/MS WINDOWS

Lab Supervisor(s):

Aisha Pearson Benjamin John Rose

718.289.5100 Ext. 3540

### Meister Hall 201

MS WINDOWS COMWEB READY

Lab Supervisor(s):

Africa Gomez Benjamin Ankomah

718.289.5442

#### Meister Hall 302

MS WINDOWS COMWEB READY

Lab Supervisor(s): Subramaria Venkata

718 289 5492

7 10.200.0 102

#### Meister Hall 328

DOUBLE ROOM LAB! MS WINDOWS COMWEB READY

#### Lab Supervisor(s):

Jesica Gomez Fernando Mercado Meister Hall 224

DOUBLE ROOM LAB! MS WINDOWS COMWEB READY

Lab Supervisor(s): Ralph Perez

Brian Alejo 718.289.5424

#### Meister Hall 318

MS WINDOWS COMWEB READY

Lab Supervisor(s): Nilda Rodriguez

Nicolas Estrella

718.289.5500

### Meister Hall 329 WIRELESS!

MAC OSX/MS WINDOWS

### Lab Supervisor(s):

Nancy Gonzalez Zoila Morillo

718.289.5504

#### Meister Hall 225

DOUBLE ROOM LAB! MAC OSX

#### Lab Supervisor(s):

Ralph Perez Brian Alejo

718.289.5424

#### Meister Hall 320

MS WINDOWS COMWEB READY

### Lab Supervisor(s): Robelkys Vargas

Eddy Gonzalez 718.289.5376

Meister Hall G01 DOUBLE ROOM LAB! MAC OSX/MS WINDOWS

### Lab Supervisor(s): Yohan Heredia Jaimy Peña

718.289.5578

New Hall 23 MS WINDOWS

Lab Supervisor(s): Alfida Morel

718.289.5005

#### Meister Hall G02

DOUBLE ROOM LAB! MAC OSX/MS WINDOWS

#### Lab Supervisor(s): Yohan Heredia Jaimy Peña

718.289.5578

Loew Hall 320

## MS WINDOWS

Lab Supervisor(s): Yra Yza Francisco

Christian Miranda

### 718.289.5878

Ismeyda Batista 718.289.5733

Meister Hall G16

DOUBLE ROOM LAB!

COMWEB READY

Francisco Morel

718.289.5592

MS WINDOWS

Lab Supervisor(s):

Yuderka Altagracia

Lab Supervisor(s):

Yuderka Altagracia

Colston Hall 602/603

MS WINDOWS

#### Meister Hall G17

#### DOUBLE ROOM LAB! MS WINDOWS

### Lab Supervisor(s):

Francisco Morel Yuderka Altagracia

718.289.5592

### Carl Polowczyk Hall 320 MS WINDOWS

Lab Supervisor(s):

# Victoria Acevedo

718.289.5417

### Brown Annex 107

MS WINDOWS

#### Lab Supervisor(s):

Mayuri Lora Maxi Cruz

Ext. 718.289.5100 Ext. 3137

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#### Computer Labs

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