

WebWork assignment number 231, *prerequisitesdue* : 01/12/2011at01 : 25pmEST.

The purpose of this assignment is for you to determine if you have the prerequisite algebra and precalculus knowledge to take Math 231. Everything on this assignment is something you should already know how to do, and if not, then you should review it.

In Math 231 the cutoff placement score is 18/45. Check on ecampus to make sure you are over this cutoff. This WebWork assignment is sort of a second chance for that placement score. If your placement score is very low but you can review to perform well on this assignment then you might still be able to succeed in the course. In any case you should complete this assignment to get up to speed for the course.

This assignment is worth up to 10 points, based on how many problems you attempt and how many you successfully complete.

The primary purpose of WebWork is to let you know that you are getting the correct answer or to alert you if you are making some kind of mistake. You can attempt a problem as many times as you want before the due date. However, if you get an answer wrong then you should look up the technique in a book or online or ask a friend or tutor before trying to answer again. Don't spend a lot of time guessing – it's not very efficient or effective.

Give 4 or 5 significant digits for (floating point) numerical answers. For most problems when entering numerical answers, you can if you wish enter elementary expressions such as 2^3 instead of 8, $\sin(3 * \pi/2)$ instead of -1, $e^{\ln(2)}$ instead of 2, etc. Here's the [list of the functions](#) which WebWork understands.

1. (1 pt) Library/FortLewis/Algebra/9-4-Factoring-quadratics/MCH1-9-4-08-Factoring-quadratics.pg

(a) Factor the expression $x^4 - 1$. If it cannot be factored, enter *NONE*.

_____ [help \(formulas\)](#)

(b) Solve the equation $x^4 - 1 = 0$. If there is more than one correct answer, enter your answers as a comma separated list. If there are no solutions, enter *NONE*.

$x =$ _____ [help \(numbers\)](#)

2. (1 pt) Library/FortLewis/Algebra/9-4-Factoring-quadratics/MCH1-9-4-40-Factoring-quadratics.pg

Solve the equation $\frac{7}{y} - \frac{7}{y-8} - 8 = 0$. If there is more than one correct answer, enter your answers as a comma separated list. If there are no solutions, enter *NONE*.

$y =$ _____ [help \(numbers\)](#)

3. (1 pt) Library/FortLewis/Algebra/9-4-Factoring-quadratics/MCH1-9-4-14-Factoring-quadratics.pg

(a) Expand and factor the expression $x(x - 3) - 28$. Enter the factored form below.

_____ [help \(formulas\)](#)

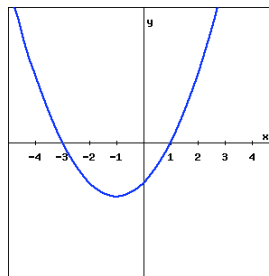
(b) Solve the equation $x(x - 3) = 28$. If there is more than one correct answer, enter your answers as a comma separated list. If there are no answers, enter *NONE*.

$x =$ _____ [help \(numbers\)](#)

4. (1 pt) Library/FortLewis/Algebra/9-2-Quadratic-expressions-/MCH1-9-2-02-Quadratic-expressions.pg

Find a possible formula for the quadratic function in the graph.

$f(x) =$ _____ [help \(formulas\)](#)



5. (1 pt) Library/FortLewis/Algebra/2-4-Algebraic-fractions/MCH1-2-4-08-Algebraic-fractions.pg

Write the expression as a single fraction. Simplify your answer.

$$\frac{4}{a} + \frac{7}{b} = \underline{\hspace{2cm}}$$

6. (1 pt) Library/FortLewis/Algebra/2-4-Algebraic-fractions/MCH1-2-4-52-Algebraic-fractions.pg

Simplify the following expression. Assume any factors you cancel are not zero.

$$\frac{7}{s} + \frac{4}{t} = \frac{\quad}{st}$$

7. (1 pt) Library/ma112DB/set1.2/sw1.3.19.pg

The expression

$$\frac{x^6(2x)^7}{x^3}$$

equals cx^e where the coefficient c is _____, the exponent e is _____.

8. (1 pt) Library/FortLewis/Algebra/6-1-Exponent-rules/MCH1-6-1-50-Exponent-rules.pg

Without a calculator, determine whether the following quantities are positive or negative.

- ? 1. 61^{-1}
 ? 2. -45^{-22}
 ? 3. $(-69)^{-77}$
 ? 4. $(-85)^{58}$
 ? 5. $(-53)^0$

9. (1 pt) Library/ma117DB/set2/srw1.7.19.pg

The solution of the linear inequality $9 \leq x + 2 < 14$ is [_____, _____).

10. (1 pt) Library/Utah/Calculus_I/set1_Preliminaries/1210s1p12.pg

The equation of the line with slope 2 that goes through the point $(8, 7)$ can be written in the form $y = mx + b$ where m is:

and where b is: _____

11. (1 pt) Library/FortLewis/Algebra/2-2-Distributive-law/MCH1-2-2-16-Distributive-law.pg

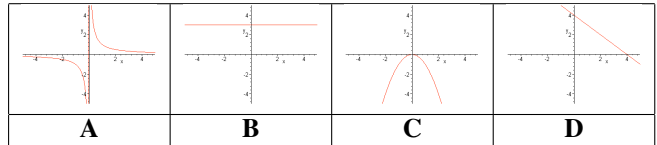
Rewrite the expression $7x(x+3) + 9(x+3)$ by taking out the greatest common factor.

_____ [help \(formulas\)](#)

12. (1 pt) Library/maCalcDB/setAlgebra16FunctionGraphs/c4s2p19.40/c4s2p19.40.pg

Match the functions with their graphs. Enter the letter of the graph below which corresponds to the function. (Click on image for a larger view.)

- ___ 1. $-x + 4$
 ___ 2. $-x^2$
 ___ 3. $\frac{1}{x}$
 ___ 4. 3



13. (1 pt) Library/Rochester/setAlgebra15Functions/sw4.1.33.pg

Let $f(x) = 5 - 8x + 6x^2$. Calculate the following values:

$$f(a) = \underline{\hspace{2cm}}$$

$$f(a+h) = \underline{\hspace{2cm}}$$

$$\frac{f(a+h) - f(a)}{h} = \underline{\hspace{2cm}} \text{ for } h \neq 0$$

14. (1 pt) Library/ASU-topics/setFunctions/di7.pg

The domain of the function

$$f(x) = \frac{\sqrt{20+x}}{9-x}$$

is _____.

Note: Write your answer in interval notation. If the answer includes more than one interval write the intervals separated by the union symbol, U. If the answer involves $-\infty$, input *-infinity* ; if the answer involves ∞ , input *infinity* .

15. (1 pt) Library/CollegeOfIdaho/setAlgebra_03.01.SystemOfLinearEq-/31IntAlg_09_LinearSystem.pg

Solve the following system of equations.

$$\begin{aligned} 5x - 4y &= -6 \\ 20x - 16y &= -24 \end{aligned}$$

Answer: _____