Are you ready for Math 99?

Currently all WSU math courses offered by DDP require that you pass Math 099 with a grade of C or better. Before you start Math 099 you should be able to do the following types of problems, covered in Math 091.

Example problems are given in bold type.

Add, subtract, multiply, and divide with positives and negatives
Evaluate exponents
Use the order of operations to simplify

Simplify: $-8(1) + 12^2 - [4(-2) - 3^2]$

Solve linear equations and inequalities

Solve: $-8x - 5(x + 4) = -10$

Solve: $9x + 1 < -8x - 6$

Solve Percent Problems

Josh left a tip of 15% for a meal that cost $26. How much of a tip did he leave?

Graph a line, find the slope of the line and the intercepts of the line.

Write the equation in slope-intercept form, state the slope and y-intercept, and graph the equation $4x - 6y = -24$.

Simplify using the rules of exponents

Simplify: $(4m^3)(2m^2)$

Simplify: $\frac{x^5}{x^{-6}}$

Simplfy: $(4x^3)^3$

Add, subtract, multiply, and divide polynomials

Simplify: $(-2y - 3)(4y^2 - y + 3)$

Simplify: $(-2x^7 + 7x^9 + 1 - 2x^8) - (-3 + 7x^8 + 2x^9 - 5x^7)$

Simplify: $\frac{9x^8 - 10x^4 + x^2}{x}$

Factor polynomials

Factor: $2x^3y^4 - 6x^3s^4 - 16m^3x^4$
Factor: $x^2 - 5x - 66$
Factor: $x^2 - 25$
Factor: $2x^2 + 5x - 7$

Solve Quadratic Equations by factoring

Solve: $x^2 - 5x - 66 = 0$

Solve Application Problems using Algebra

A room has an area of 204 square feet. One dimension is 5 feet more than the other. Find the dimensions of the room.

Jim's Rescue Service saved 22 people last month and 18 people the month before. How many people must be saved this month in order to maintain an average of at least 21 people saved per month for the three-month period?

Solutions to Example Problems:

Simplfy:
$-8(1) + 12^2 – [4(-2) – 3^2]$
-8 + 144 – [-8 – 9]
-8 + 144 – [-17]
-8 + 144 + 17
153

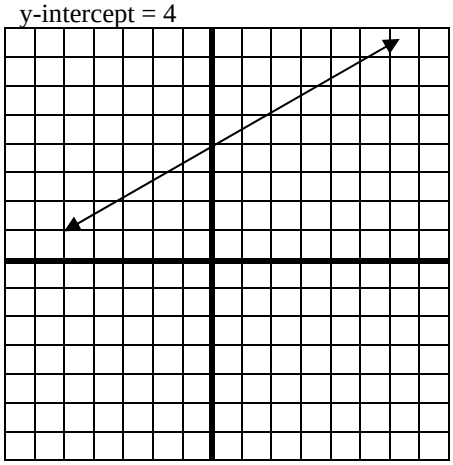
Solve:
$–8x – 5(x + 4) = -10$
-8x – 5x – 20 = -10
-13x – 20 = -10
+20 +20
-13x = 10
x = -10/13

Solve:
$9x + 1 < -8x – 6$
+8x +8x
17x + 1 < -6
-1 -1
17x < -7
x < -7/17

Josh left a tip of 15% for a meal that cost $26. How much of a tip did he leave?
26(.15) = t
3.9 = t
He left a tip of $3.90

Write the equation in slope-intercept form, state the slope and y-intercept, and graph the equation:
4x – 6y = -24
-6y = -4x – 24
y = 2/3x + 4

Slope = 2/3
y-intercept = 4



Simplify: $(4m^3)(2m^2)$
$8m^5$

Simplify: $\dfrac{x^5}{x^{-6}}$
X^{11}

Simplfy: $(4x^3)^3$
$64x^9$

Simplify: $(-2y - 3)(4y^2 - y + 3)$
$-8y^3 + 2y^2 – 6y – 12y^2 + 3y - 9$
$-8y^3 - 10y^2 – 3y - 9$

Simplify:
$(-2x^7 + 7x^9 + 1 - 2x^8) - (-3 + 7x^8 + 2x^9 - 5x^7)$
$5x^9 - 9x^8 + 3x^7 + 4$

Simplify: $\dfrac{9x^8 - 10x^4 + x^2}{x}$
$9x^7 – 10x^3 + x$

Factor: $2x^3y^4 – 6x^3s^4 - 16m^3x^4$
$2x^3(y^4 – 3s^4 – 8m^3x)$

Factor: $x^2 - 5x – 66$
(x – 11)(x + 6)

Factor: $x^2 – 25$
(x – 5)(x + 5)

Factor: $2x^2 + 5x – 7$
(2x + 7)(x – 1)

Solve: $x^2 – 5x – 66 = 0$
(x – 11)(x + 6) = 0
x – 11 = 0 or x + 6 = 0
x = 11 or x = -6

A room has an area of 204 square feet. One dimension is 5 feet more than the other. Find the dimensions of the room.

Let w = width, so w + 5 = length
Area = lw
204 = (w + 5)w
204 = w2 + 5w
0 = w2 + 5w – 204
0 = (w + 17)(w – 12)
w = -17 or w = 12
Since the width must be positive, w = 12.
The width is 12 feet and the length is 12 + 5 = 17 feet.

Jim's Rescue Service saved 22 people last month and 18 people the month before. How many people must be saved this month in order to maintain an average of at least 21 people saved per month for the three-month period?

(22 + 18 + x)/3 = 21
22 + 18 + x = 63
40 + x = 63
x = 23 people