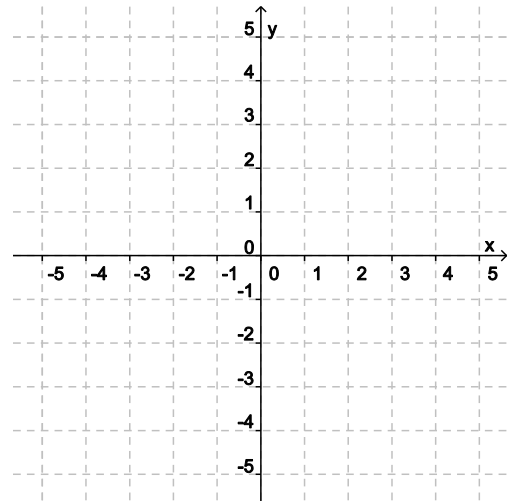_____ / 50 total points

Test #2

Math 51, Section 27, Prof. Beydler

Name: _____

Wednesday, October 22, 2014

Directions: Show all work. No books or notes. A **scientific calculator** is allowed. Your desk and lap must be clear (no phones, notebooks, etc.). Please box your answers. Good luck!

1. (2 points) Graph: $3x - 2y \geq 6$.

2. (3 points) Solve the system.

$x = 3y + 8$

$2x - y = 6$

3. (3 points) Solve the system (find the solution set).

$3x - 3y = 6$

$2x = 2y + 4$

4. (3 points) Solve the system.

$$\frac{1}{5}x + y = \frac{6}{5}$$

$$\frac{1}{10}x + \frac{1}{3}y = \frac{5}{6}$$

5. (4 points) How many pounds of nuts selling for $6 per lb and raisins selling for $3 per lb should you combine to obtain 60 lb of a trail mix selling for $5 per lb? Be sure to show your work.

6. (1 point) Simplify.

$$(3x^2 y^3)^3$$

7. (1 point) Simplify. Be sure you don't have negative or zero exponents in your final answer.

$$\frac{x^{-7}}{x^{-9}}$$

8. (3 points) Simplify. Be sure you don't have negative or zero exponents in your final answer.

$$(-3x^{-6}y)(-2x^3y^4)^2 =$$

9. (3 points) Simplify. Be sure you don't have negative or zero exponents in your final answer.

$$\frac{(m^7n)^{-2}}{m^{-4}n^3}$$

10. (1 point) Write the number without exponents.

9.165×10^6

11. (1 point) Write each number in scientific notation.

0.0000458

12. (2 points) Perform the following calculation, and write your answer in scientific notation.
$(3 \times 10^{-4})(9 \times 10^{13})$

13. (2 points) Perform the following calculation, and write your answer in scientific notation.
$$\frac{-4.5 \times 10^4}{1.5 \times 10^{-2}}$$

14. (2 points) Subtract: $(6x^2y^5 - 2xy^3 - 8) - (-7x^2y^5 - 4xy^3 + 2)$

15. (2 points) Multiply.
$-5xy(8x + 3y - 2x^2y^3)$

16. (2 points) Multiply.
$(3x - y)(2x + 5y)$

17. (2 points)

Multiply: $\left(\frac{1}{2}x - 3y^4\right)^2$

18. (2 points) Perform the following division. Be sure not to leave any negative exponents in your final answer.

$$\frac{2m^5 - 6m^4 + 8m^2}{-2m^3}$$

19. (3 points) Perform the following division. Be sure to box your final answer.

$(x^3 + 2x^2 - 2) \div (x - 1)$

20. (2 points) Factor: $3x^2y + 6x^4y^2 - 12x^3y^6$

21. (2 points) Factor by grouping: $2x^3 - 10 + 4x^2 - 5x$

22. (2 points) Factor.
$z^2 - 15z + 56$

23. (2 points) Factor.
$6x^2 - 5x - 6$

24. (0 points) Did you place into Math 51, or did you take the Math 50 prerequisite?
Please circle one:
PLACED INTO MATH 51   or   TOOK MATH 50   or   OTHER _____
How many months/years ago did you last take Math 50 (or equivalent)? _____

Note: Be sure to double check your work. And don't forget to turn in your homework! ☺