Math 50 / Beginning Algebra
Final Exam
Fall 2004

Print Name: _____

Class (circle one): MW 9 MW 11

Instructions: Show all work and circle all answers. On the word problems, make sure you define a variable and set-up an equation representing the problem. Then solve the equation - do not simply guess and check. Each problem is worth 4 points.

1. Evaluate $3b - a^2$ when $a = -2$ and $b = 4$.

2. Simplify $-2[x - (3y - x)] + 5y$

3. Solve $8x - 3(4x - 5) = -2x - 11$

4. Write $\frac{7}{8}$ as a percent with the remainder in fractional form.

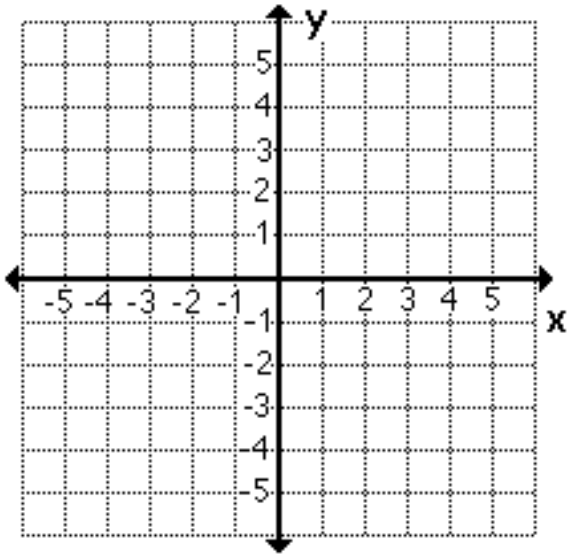
5. Simplify $25 - 3 \cdot \frac{(2-5)^2}{2^3 + 1} - (-2)$

6. The sum of two numbers is twenty-one. Three times the smaller number is two less than twice the larger number. Find the two numbers. Solve by setting up an equation and solving it.

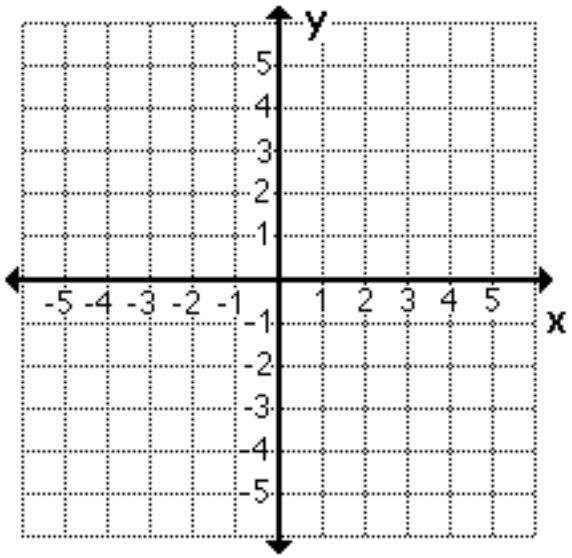
7. The owner of a health food store combined cranberry juice that cost $1.79 per quart with apple juice that cost $1.19 per quart. How many quarts of each were used to make a 10 quart mixture of cranapple juice costing $1.61 per quart? Solve by setting up an equation and solving it.

8. Two planes start at the same time from the same place and fly in opposite directions. The first plane is flying at 100 mph faster than the second plane. In 3 hours the two planes are 1050 miles apart. Find the rate of each plane. Solve by setting up an equation and solving it.

9. Graph the line that has slope 2 and y-intercept (0, -4).



10. Graph the solution set of $2x - y > 2$



11. Solve by the substitution method:

$$8x - y = 2$$
$$y = 5x + 1$$

12. Solve by the addition method:

$$8x - y = 25$$
$$32x - 4y = 100$$

13. A music store sells new CDs at $15 each and used CDs at $10 each. A customer spent $120 on 10 CDs. How many new and used CDs did the customer purchase? Solve by setting up an equation and solving it.

14. Simplify $(-2a^2b)^3(5ab^2)$

15. Simplify $(2x-5)^2$

16. Divide $(8x^2+4x-3)\div(2x-3)$

17. Divide $\dfrac{16x^5-8x^3+20x}{4x}$

18. Divide $\dfrac{x^2+3x+2}{x^2+5x+4} \div \dfrac{x^2-x-6}{x^2+2x-15}$

19. Solve $\dfrac{x+8}{x+4} = 1 + \dfrac{5}{x+4}$

20. Find the equation of the line that contains the point (-2, -3) and has slope $\dfrac{1}{2}$.

21. Solve $\sqrt{2x-3} - 5 = 0$

22. Subtract $\dfrac{25}{5-7y} - \dfrac{35y}{7y-5}$

23. Factor $4x^2 - 25y^2$

24. Solve $2x^2 - 5x = 12$

25. Simplify $\dfrac{1+\sqrt{2}}{1-\sqrt{2}}$