

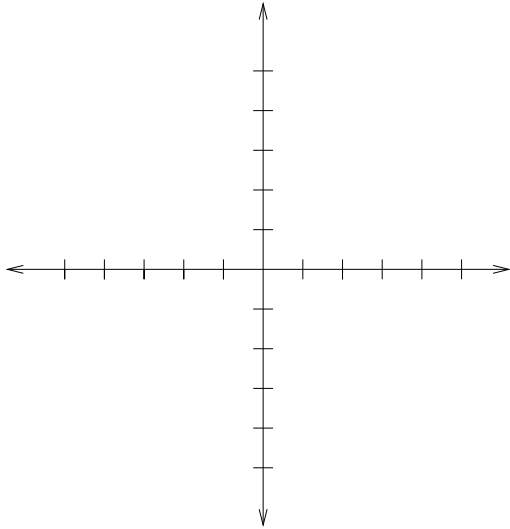
Math 99
Exam 2
November 9, 2006

Name: _____

1. Your exam contains 6 questions and 5 pages; Please make sure you have a complete exam.
2. The entire exam is worth 100 points. Point values for problems vary and these are clearly indicated. You have 50 minutes for this exam.
3. Make sure to **ALWAYS SHOW YOUR WORK**; you will not receive any partial credit unless all work is clearly shown. If in doubt, ask for clarification.
4. If you need extra space, use the back page of the exam and clearly indicate this.
5. You are allowed one 8.5×11 sheet of handwritten notes (both sides). Graphing and scientific calculators are allowed.
6. Leave answers in exact form (as simplified as possible).

| Problem | Total Points | Score |
|---------|--------------|-------|
| 1 | 10 | |
| 2 | 20 | |
| 3 | 40 | |
| 4 | 20 | |
| 5 | 10 | |
| Total | 100 | |

1. (10 pts.) Graph the solutions to the inequality $3x - y < 3$.



2. (20 pts.) Let $f(x) = x^2 + 2x - 1$

(a) (5 pts.) What is the domain of f ?

(b) (5 pts.) What is $f(2)$?

(c) (10 pts.) What is $f(x + 2)$? Simplify your answer as much as possible.

3. (40 pts.) Simplify the following expressions (Assume all variables are positive):

(a) (6 pts.) $\sqrt[6]{y^5} \cdot \sqrt[3]{y^2}$ (Give answer in exponential form.)

(b) (7 pts.) $\left(\frac{a^{-2}b^3}{a^4b^{-3}}\right)^{-\frac{2}{3}}$ (Give answer with positive exponents only.)

(c) (6 pts.) $-\sqrt{100x^6y^4}$

#3 continued:

(d) (7 pts.) $2\sqrt{18a^3} + 5a\sqrt{72a}$

(e) (7 pts.) $\frac{\sqrt{8}}{2-\sqrt{2}}$ (Rationalize the denominator and simplify.)

(f) (7 pts.) $\sqrt{\frac{9}{x^6}} + \sqrt{\frac{1}{25}}$ (Write the answer as one fraction.)

4. (20 pts.) Solve the following equations:

(a) (10 pts.) $\sqrt[3]{2x+1} - 3 = 0$

(b) (10 pts.) $\sqrt{16-5x} = x - 2$

5. (10 pts.) Find the distance between the points $(1, -3)$ and $(-4, 2)$. Simplify your answer.