

Write your name on the cover of the test booklet and nowhere else. Failure to follow these directions will cost you 1 point. The test has 100 points (to be scaled up to 150 points) and is scheduled to take 50 minutes. Therefore, expect to spend 1 minute for every 2 points. For example, a 16-point question should take 8 minutes. I cannot allow extra time because of the class that follows our class.

Show all work and write each answer on a separate side of a sheet of paper.

- 1) (10 points) Simplify $\frac{3\sqrt{X} - 3\sqrt{3}}{\sqrt{27X}}$.
- 2) (10 points) Solve the equation $5 - 7X = 13 + X$ for X .
- 3) (10 points) Solve the equations $2X + 3Y = 29$ and $X - 2Y = -3$ for X and Y .
- 4) (10 points) Solve the equations $5X + 5Y = 0$ and $-2X + 2Y = 12$ for X and Y .
- 5) (10 points) Solve the equation $-5 < 3X + 4 \leq 10$ and then plot it.
- 6) (10 points) Write the geometric interpretation of $|X + 2| > 3$ and plot it.
- 7) (10 points) Solve the equation $-5 < -2X + 3 \leq 1$ and then plot it.
- 8) (15 points) Suppose your Economics course grade part way through a semester is 60%. Of the 1000 possible points in the course, 300 points have been recorded. What percent of the remaining points must you get correct if you want to get 74% for the semester?
- 9) (15 points) A cyclist goes 10 MPH faster down a hill than up the hill. Going uphill takes 2 hours and going downhill takes 1 hour. The two paths are identical. What is her speed going uphill, and what is the speed going downhill?