

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) Solve $|X+2|>3$ for X and plot your results.

2) (10 points) Solve $|3 - X| \leq 2$ for X and plot your results.

3) (10 points) Simplify $i^5 + (4 + 2i)(3 - i)$.

4) (10 points) Simplify $\frac{3 - i}{4 - 3i}$.

5) (10 points) Find all solutions to $3X^2 + 4X = -2$.

6) (15 points) If a 4 inch x 5 inch rectangle has both lengths increase by the same amount, and if the resulting area is 2.8 times as large as the original area, then how much was each side increased by?

7) (10 points) Solve $\sqrt{X + 5} = X - 1$ for X .

8) (10 points) Solve $X^{2/3} + X^{1/3} - 2 = 0$ for X .

9) (15 points) Find all values for G for which $\frac{X^2 + 4X - 21}{X + 1} \geq 0$. Plot your results.