

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 140 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) (12 points) Find $|-7 + 12|$. Show one intermediate step. Simplify $\frac{-4}{X} - \frac{X-8}{2X}$

2) (8 points) Simplify $[(9X^3X)^{-1}]^{1/2}$

3) (12 points) Multiply and then simplify $(3X - 1)^3$

4) (10 points) Factor $8X^5 - 24X^4 - 80X^3$

5) (20 points) Simplify $\frac{X^2 - 2X - 15}{6X^2 + 36X + 54} \div \frac{X^2 - 10X + 25}{9X + 45}$

6) (20 points) Draw a line from $(-1, 4)$ to $(7, -2)$. Find the distance between those points and find the midpoint of the line.

7) (14 points) Simplify $\frac{\frac{1-2X}{X} + 3}{\frac{4X+4}{X^2}}$

8) (4 points) Give an example of the commutative property in multiplication and the associative property in addition.