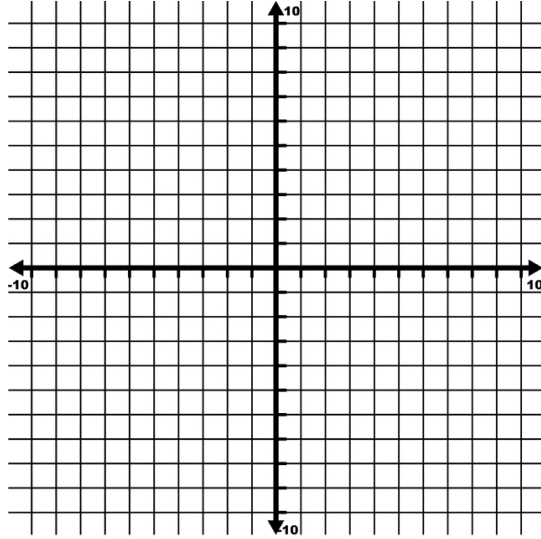**MATHEMATICS IV**
DIAGNOSTIC EXAM

Name: _____ **Group:** _____

Instructions: Solve correctly the following problems. Cell phones and calculators are not allowed. Write your procedure and operations. Answers without procedure are not valid (zero points).
Consider the equations $x + y = 4$ and $3x - 2y = 5$.
1. Graph both equations in the cartesian plane.

2. Find the intersection of both lines.

3. Solve the following equation:
$3x^2 + 2x - 1 = 0$

4. Simplify the expression $\dfrac{a^2 - 36}{a - 6}$

Consider the following triangle. Find:

5. $\sin \alpha$ **8.** $\cot \alpha$

6. $\cos \alpha$ **9.** $\csc \alpha$

7. $\tan \alpha$ **10.** $\sec \alpha$