MATH 124 - Exam 2 Review
All material covered in class is eligible for exam, this review is not all inclusive.

1. Graph the line: \( y = 3x \)
2. Graph the line: \( x = -2 \)
3. Graph the line: \( y = -\frac{1}{3}x + 2 \)
4. Find the intercepts and graph: \( y = 4x - 2 \)
5. Find the intercepts and graph: \( y = x^2 - 9 \)
6. Find the intercepts and graph: \( y = x^2 + 3 \)
7. Find \( y \) when \( x = 2 \): \( 4x + 12y = -16 \)
8. Solve for \( y \): \( 3x - 8y = -12 \)
9. Graph: \( y = x^2 + 1 \)
10. Graph: \( y = \sqrt{x + 2} \)
11. Graph: \( y = -|x| \)

If \( f(x) = 2x - 5 \) and \( g(x) = x^2 + 3x + 4 \), find:

12. \( f(3) \)
13. \( g(2) \)
14. \( f(-1) + g(-2) \)
15. \((f + g)(x)\)
16. \((f - g)(x)\)
17. \((fg)(x)\)
18. \( \left(\frac{f}{g}\right)(x) \)
19. If \( f(x) = \frac{1}{x+3} \), find: \( f(\frac{1}{3}) \)
20. If \( f(x) = x^2 - 4 \), find: \( f(a - 3) \)
If \( f(x) = x^2 + 2x - 1 \) and \( g(x) = x + 4 \), find:

21. \((f \circ g)(x)\)

22. \((g \circ f)(x)\)

23. Find the slope of the line that goes through the points \((-3, 2)\) and \((-1, 6)\)

24. Find the equation of the line that goes through \((-1, -5)\) with slope \( m = 2 \)

25. Find the equation of the line that goes through \((4, -3)\) with slope \( m = \frac{1}{6} \)

26. Find the equation of the line that is parallel to \(2x - 4y = 5\) and contains the point \((2, 3)\)

27. Find the equation of the line that is perpendicular to \(-3x - 5y = 2\) and contains the point \((2, -6)\)

28. Find the equation of the line that has \(x\)-intercept 2 and \(y\)-intercept 3

29. Find the vertex, \(x\)-intercepts and \(y\)-intercept of \(f(x) = -(x - 3)^2 + 1\)

30. Find the vertex, \(x\)-intercepts and \(y\)-intercept of \(f(x) = x^2 + 4x - 5\)