Honors Algebra 2 (2024-2025)

You are expected to be able to do the following on the first day of class in Honors Algebra 2:

1. Solve equations and inequalities
2. Graph lines by hand and using a graphing calculator
3. Find equations of lines
4. Factor
5. Solve systems of equations
6. Use the properties of exponents
7. Simplify radicals

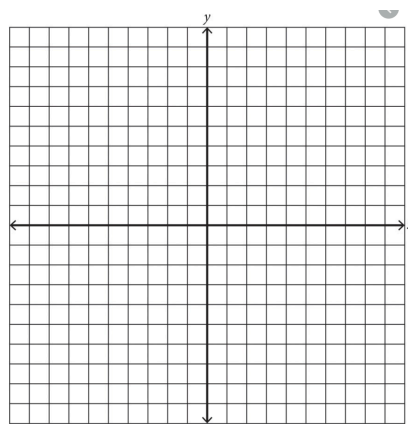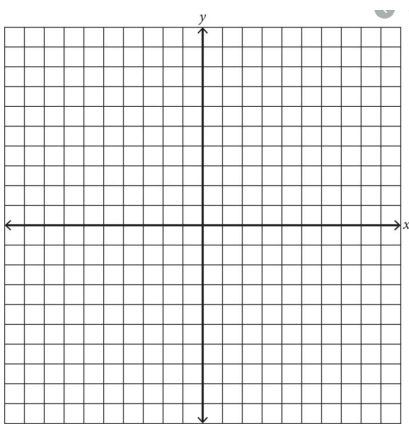This material will be included on your first test.

Examples:

1. Solve: $5(x-2) + 4 = 2x - 1$

2. Solve: $2(4-x) - 6x < 20$

3. Graph by hand and check by graphing on your calculator:

   A. $y = \dfrac{3}{4}x - 2$

   B. $4x - 2y = 8$

4. Give an equation of the line through the points (2,6) and (-1,-3).

5. Give an equation of the line parallel to $y = 2x + 8$, that passes through the point (6,-2).

6. Give an equation of the line perpendicular to $2y - 6x = 10$, that passes through (-4,6).

7. Factor each of the following:

A. $x^2 - 3x - 10$

B. $2x^2 + 5x - 12$

C. $x^2 - 36$

D. $3x^2 + 3x - 90$

E. $x^2 - 8x - 48$

8. Solve:
$$2x - 8y = 2$$
$$x + 3y = 8$$

9. Solve:
$$9x + 2y = 5$$
$$y = 3x$$

10. Simplify: $\left(4x^3\right)^2$

11. Simplify: $\left(5x^{10}\right)\left(3x^2\right)$

12. Simplify: $\dfrac{x^5 y^3}{xy^2}$

13. Simplify:

A. $\sqrt{200}$

B. $\sqrt[3]{56x^3}$