

H. Algebra II Semester II Review

Part 1 – Linear Functions

Instructor: M. Wolverton

1.a Linear Function Fitting

Find the equation of a line in slope intercept form with the following characteristics.

1. passing through $(\frac{3}{2}, 1)$ and $(5, \frac{5}{2})$
2. Parallel to the line $5x - 3y = 3$ passing through $(-2, 4)$
3. Perpendicular to the line $x + y = 0$ and passing through $(1, 3)$

1.b 2 Variable Linear Systems

Solve the following linear systems of equations by any method. Show your reasoning.

1. $5(1-x) = 2(x+3y)$
 $2(x-y) = y-8$
2. $3(y-9) - 4x = 11x$
 $7x - y = y - 9$

Try putting the above equations in slope intercept form. Graph the lines from each system separately and check their intersection coordinates. The intersections should match your solution.

1.c 3 Variable Linear Systems

Solve the following three variable system of equations. Elimination method is typically easier for large linear systems.

1. $4x - y + 2z = 2$
 $5x - 2y + 2z = 5$
 $-6x + 2y - 5z = 7$

1.d Linear Inequalities and systems

1. The Fahrenheit and Celsius temperature scales are related by $5F = 9C + 160$. If the Fahrenheit temperature is between -4 degrees and 50 degrees, within what range is the temperature in Celsius?

Graph the solutions to the following linear systems of inequalities

2. $x - 4y \geq -8$
 $5x + 2y > -10$
3. $3x + 4y \geq 12$
 $5x - 5y \leq 5$

