For full credit on these problems, each must be submitted with a complete and clear solution, showing all of your work. You may work with other classmates on these problems, but please indicate on your assignment if you received help. Partial answers and incomplete solutions may be eligible for some partial credit, depending on the level of completeness and demonstrated understanding.

1. Sketch a graph of the equation

\[ 4x - 6y = 12, \]

and label the \( x \) and \( y \) intercepts.

2. Sketch a graph of the equation

\[ y = x^3 - x^2 - 6x, \]

and label the \( x \) and \( y \) intercepts.

3. Test the equation

\[ x^3y^6 = x^6y^4 + 17x^3y^4 \]

for symmetry with respect to each axis and to the origin. The point \((-2, 3)\) is on the graph of this equation. Find another point on the graph.

4. Water freezes at 0\(^\circ\) Celsius (\(C\)) and 32\(^\circ\) Fahrenheit (\(F\)), and boils at 100\(^\circ\)C and 212\(^\circ\)F. We can treat these as two points \((C, F) = (0, 32)\) and \((C, F) = (100, 212)\) on a \(CF\)-plane.

(a) Plot these two points on the \(CF\)-plane, where \(C\) represents the horizontal axis, and draw the line through these points.

(b) Find an equation of this line representing \(F\) in terms of \(C\).

(c) If it is 32\(^\circ\)C, what is the temperature in degrees Fahrenheit?

(d) Solve the equation you found in part (b) for \(C\).

(e) If an object is 145\(^\circ\)F, what is the temperature in degrees Celsius?

(f) Find the temperature where degrees Celsius equals degree Fahrenheit.