

5.1 Using Technology Wisely Practice Problems

1. Sketch a complete graph of each equation. Make sure that you label the axes for each graph. Which graphs can you draw without the assistance of a calculator? If you used your calculator to help you sketch a graph, what feature(s) of the calculator helped you to sketch a reasonable graph?

(a) $y = 3x + 7$

(b) $4x^2 + 9y^2 = 36$

(c) $y = 5x^7 - 20x^4 + 3x^2 - 8$

2. Which of the following equations should be solved algebraically and which should be solved graphically? Solve each equation. If the solution you find is approximate, be sure to indicate that it is approximate with \approx . If you use a graph to find a solution, be sure to sketch the graph and label it.

(a) $3x^6 = 5x^3 + 2$

(b) $\frac{x}{x^5 + 1} = 2$

(c) $\sqrt{x + 7} = x$

(d) $x^3 + 15 = 5x^2 + 3x$

(e) $x^3 + 15 = 5x^2 + 3$

3. Show that the equation $x^2 - 2x - 6 = \sqrt{2x + 7}$ has two real solutions by graphing the left and right sides in the standard window and counting the number of intersection points. Approximate the solutions. (Make sure you use \approx for approximate solutions.)
4. What would you enter in your calculator if you wanted the graph of $2x - 4(y + 3)^4 + 1 = 0$?