1. Multiply and simplify: \((5x^2 - 4x - 2)(3x - \sqrt{x} + 5)\).

2. Divide: \((x^3 - 7x^2 - 20x + 96) \div (x - 8)\).

3. Find an equation for the line through the point \((2, 5)\) which is perpendicular to the line \(3x + 12y = 17\).

4. Solve: \(|x| > 15\).

5. Solve: \(|x - 9| = 3\).

6. Solve: \(|x - 9| \geq 3\).

7. Solve \(x^2 + 4x + 1 = 0\) using the Quadratic Formula.

8. Solve \(x^2 + 4x + 1 = 0\) by Completing the Square.

9. Factor \(x^3 - 7x^2 - 20x + 96\) completely.

10. Solve: \(x^3 + 96 = 7x^2 + 20x\).

11. Solve: \(x^3 + 96 > 7x^2 + 20x\).

12. Solve: \(x^4 + 8x^3 + 140 = 9x^2 + 92x\).

13. Solve: \(x^4 + 8x^3 + 140 \leq 9x^2 + 92x\).

14. Solve: \(\frac{x + 5}{x - 2} \leq 0\).

15. You are able to drive to Boston without hitting any traffic and average 63 miles per hour for the entire drive. Unfortunately, you hit heavy traffic on your return trip and only average 47 miles per hour. Assuming the distances in both directions are exactly the same, what is your average speed for the round trip?

16. A 5” \(\times\) 7” photograph is placed in a frame which has a total area of 43.225 square inches. If the border surrounding the photograph is the same size on all sides, what are the dimensions of the frame?