

MAC1140 Written Homework 2

Due: 9/11/2015

1. Simplify the difference quotient $\frac{\sqrt{25+h}-5}{h}$.

2. Multiply the rational expression and simplify the result:

$$\frac{x^2 - 2x - 15}{x^2 + 2x + 1} \cdot \frac{x + 1}{x + 3}$$

3. Divide the rational expression and simplify the result:

$$\frac{-x + 4}{x^2 - 16} \div \frac{x - 6}{x^2 - 8x + 15}$$

4. Solve $-3(x + 6) + 1 = 4(6x - 1)$.

5. Solve $\frac{6x}{x^2 - 1} = \frac{-4}{x^2 - 1} - \frac{-2}{x - 1}$.

6. Solve $x^2 - 9x = -18$.

7. Solve by completing the square: $-4x^2 + 8x + 59 = 0$.