

SEW Math HW 3 Due Monday July 9th

1. Factor the following.

$$4x^2 - 25$$

$$x^2 + x - 6$$

$$2x^2 + 11x + 15$$

$$x^2 - 4$$

2. Use your answers from problem 1 to find the domain of the following rational expressions.

$$\frac{x^2 + x - 6}{2x^2 + 11x + 15}$$

$$\frac{4x^2 - 25}{x^2 - 4}$$

3. Perform the operation, simplifying as much as possible.

$$\frac{x^2 + x - 6}{2x^2 + 11x + 15} \cdot \frac{4x^2 - 25}{x^2 - 4}$$

4. Perform the indicated operation.

$$\frac{x}{x+7} - \frac{3}{x-7} + \frac{11}{x^2-49}$$

5. Simplify the following as much as possible. Leave your answers with positive exponents only.

$$\left(\frac{25}{36}\right)^{-\frac{1}{2}}$$

$$\sqrt[3]{\frac{-3x}{375x^4}}$$

$$\sqrt{32x^3y^8}$$

$$\sqrt[3]{27x^9y^{15}}$$

6. Perform the indicated operation and simplify.

$$2x\sqrt{3x} + 5\sqrt{12x^3} - x\sqrt{27x}$$

$$\sqrt[3]{2x^2y^4} \cdot \sqrt{4xy^2}$$

$$(\sqrt{5} + 3\sqrt{10})(2\sqrt{5} - \sqrt{10})$$

7. Perform the indicated operation. To begin, rewrite this with fractional exponents. Write your final answer back into radical form.

$$\frac{\sqrt{x^3}}{\sqrt[4]{x^3}}$$