Math in Living C O L O R !!

2.03 Fractional Expressions

Intermediate Algebra: One Step at a Time **Section 2.03 Page 150-156: #54**

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See Section 2.03 with explanations, examples, and exercises, coming soon!

Explanations, examples, and exercises from Basic Algebra, coming soon!

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$$\frac{x^3-8}{x^3-2x^2-2xy+4y}$$

Solution: Before you can reduce a fraction, it must be in factored form. Of course, the first step is to factor the numerator and denominator. Notice that in the numerator you have a difference of cubes, and the denominator requires factoring by grouping.

$$\frac{(x-2)(x^2+2x+4)}{x^2(x-2)-2y(x-2)}$$

At this point, notice that the denominator is NOT factored yet, so continue by taking out the common factor of $(x-2)$.

$$\frac{(x-2)(x^2+2x+4)}{(x-2)(x^2-2y)}$$

Now, divide out the $(x-2)$ factor, and the final answer is

$$\frac{x^2+2x+4}{x^2-2y}$$