

# Math 1513 - College Algebra

Quiz #11 - 2018.10.03

Solutions

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Find the domain of the rational function  $r(x) = \frac{x^2 - 3x + 11}{x^3 + x^2 - 6x}$ .

The domain of a rational function is every real number except where the denominator is zero. Thus, setting  $x^3 + x^2 - 6x = 0$ , we factor to get  $x(x + 3)(x - 2) = 0$ . By the Product of Zeros Rule, we have that  $x = 0$ ,  $x = -3$ , and  $x = 2$  are the zeros of the denominator. Thus the domain is  $\mathbb{R} - \{-3, 0, 2\}$ .