Section 9.1 Graphs of Rational Functions and Reducing Rational Expressions

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

   (a) $x - 5$
   (b) $x^2 - 7$
   (c) $x - 7$
   (d) This cannot be simplified.

2. Simplify: $\dfrac{15x^8 - 5x^6 + 30x^4}{5x^2}$

   (a) $10x^4 - x^3 + 25x^2$
   (b) $3x^4 - x^3 + 6x^2$
   (c) $10x^6 - x^4 + 25x^2$
   (d) $3x^6 - x^4 + 6x^2$

3. $\frac{x+5}{x^2+3x-10} =$

   (a) $x - 2$
   (b) $\frac{1}{x-2}$
   (c) $\frac{1}{x^2+1}$
   (d) This cannot be simplified.

4. $\frac{x^2+2}{2} =$

   (a) x^2
   (b) $x^2 + 1$
   (c) $\frac{x^2}{2} + 1$
   (d) This cannot be simplified.

5. $\frac{x^2+6}{3} =$

   (a) $\frac{x^2}{3} + 2$
   (b) $x^2 + 2$
   (c) $x^2 + \frac{1}{2}$
   (d) This cannot be simplified.

6. $\frac{3x^2+6}{3} =$

   (a) $\frac{x^2}{3} + 2$
   (b) $x^2 + 2$
   (c) $3x^2 + 2$
   (d) $x^2 + 6$

7. Let $f(x) = \dfrac{x-4}{(x+6)(x-3)}$ What is the domain of f?

   (a) $(-\infty, \infty)$
   (b) {4, -6, 3}
   (c) {-6, -3}
   (d) All reals except -6, 3