

## Rational &amp; Radical Review

Solve each equation. Remember to check for extraneous solutions.

1)  $\frac{1}{b} - \frac{5}{b^2} = \frac{1}{b^2}$

- A)  $\{-1\}$       B)  $\{6\}$   
 C)  $\left\{-\frac{1}{2}\right\}$       D)  $\{-6\}$

2)  $\frac{1}{v} - \frac{5}{v^2 - 2v} = \frac{4}{v - 2}$

- A)  $\left\{-\frac{7}{3}\right\}$       B)  $\{-6\}$   
 C)  $\{2\}$       D)  $\left\{-\frac{8}{5}\right\}$

3)  $\frac{5}{n} + \frac{2n - 4}{n - 3} = 4$

- A)  $\{4, 5\}$       B)  $\left\{5, \frac{3}{2}\right\}$   
 C)  $\{4, -5\}$       D)  $\{5\}$

4)  $\frac{k - 4}{4k} = \frac{1}{4} - \frac{2}{k^2}$

- A)  $\{2, 3\}$       B)  $\{-5, 3\}$   
 C)  $\{-5, 6\}$       D)  $\{2\}$

5)  $\sqrt{x - 6} = \sqrt{8 - x}$

- A)  $\{-7\}$       B)  $\{9\}$   
 C)  $\{6\}$       D)  $\{7\}$

6)  $-63 = -7\sqrt{81v}$

- A)  $\{5, -1\}$       B)  $\{-5\}$   
 C)  $\{-1\}$       D)  $\{1\}$

7)  $(-4 - a)^{\frac{1}{2}} - 5 = -4$

- A)  $\{-4\}$       B)  $\{-2, 9\}$   
 C)  $\{-1\}$       D)  $\{-5\}$

8)  $\sqrt{2 - p} = p$

- A)  $\{-2\}$       B)  $\{-2, 6\}$   
 C)  $\{-2, -7\}$       D)  $\{1\}$

Identify the holes, vertical asymptotes, horizontal asymptote, and domain of each. Then sketch the graph.

9)  $f(x) = \frac{-x + 2}{x^2 + x - 6}$

10)  $f(x) = \frac{x^2 - x - 6}{4x^2 + 4x - 48}$

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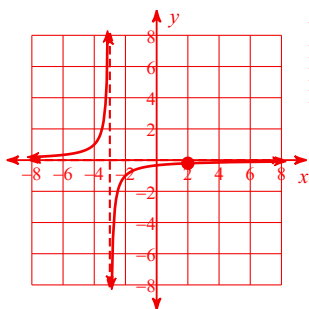
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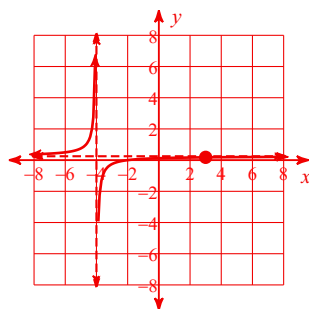
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Vertical Asym.:  $x = -3$   
 Holes:  $x = 2$   
 Horz. Asym.:  $y = 0$   
 Domain:  
 All reals except  $-3, 2$

10)  $f(x) = \frac{x^2 - x - 6}{4x^2 + 4x - 48}$



Vertical Asym.:  $x = -4$   
 Holes:  $x = 3$   
 Horz. Asym.:  $y = \frac{1}{4}$   
 Domain:  
 All reals except  $-4, 3$