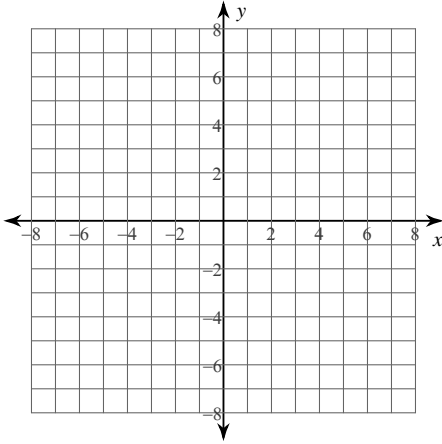


## Graphing Rationals - More Practice

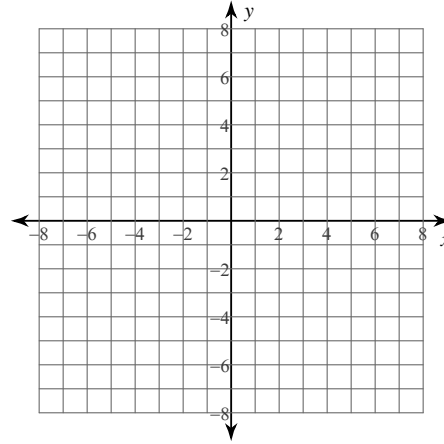
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**Identify the holes, vertical asymptotes, horizontal asymptote, and domain of each. Then sketch the graph.**

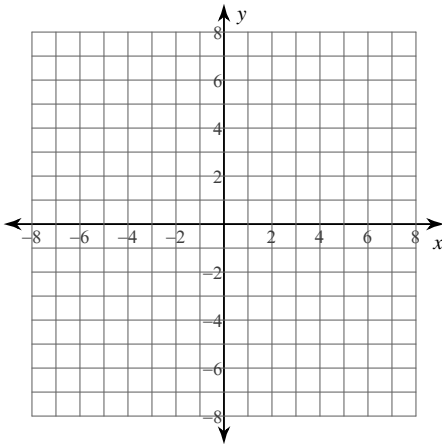
1)  $f(x) = -\frac{1}{x^2 - x - 6}$



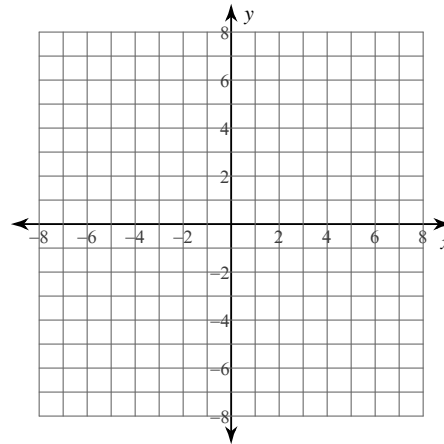
2)  $f(x) = \frac{x^2 - 16}{3x^2 - 27}$



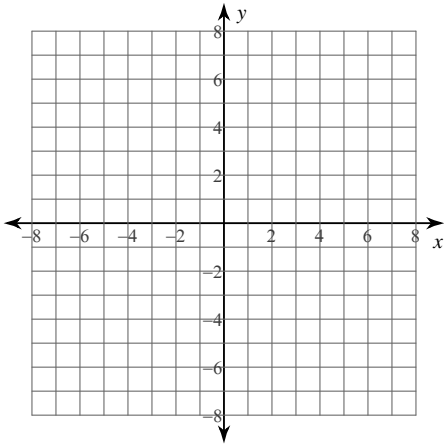
3)  $f(x) = \frac{-2x + 4}{x^2 - x - 2}$



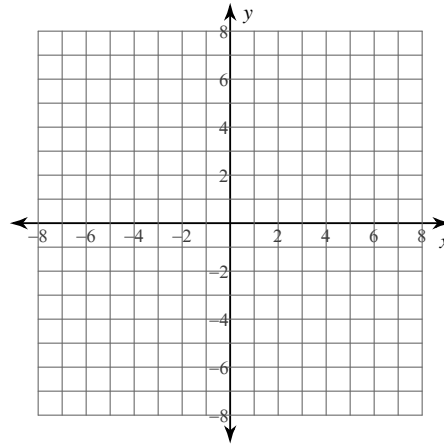
4)  $f(x) = \frac{3x + 12}{x + 2}$



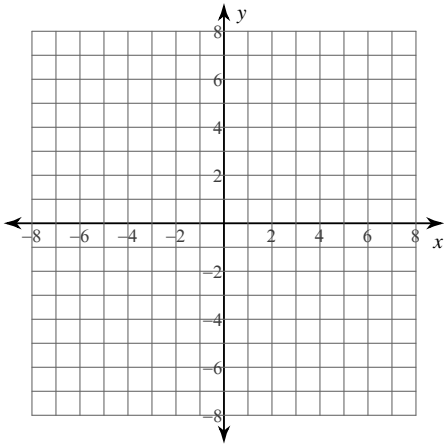
$$5) f(x) = \frac{x^3 + x^2 - 12x}{2x^2 + 2x - 12}$$



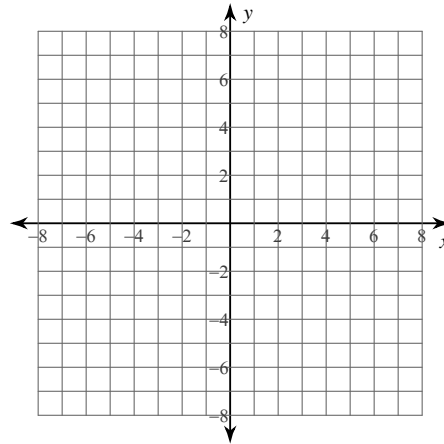
$$6) f(x) = \frac{x^3 - x^2 - 6x}{4x^2 - 8x - 12}$$



$$7) f(x) = \frac{x^3 + x^2 - 6x}{3x^2 - 6x - 9}$$



$$8) f(x) = \frac{x^2 + x - 12}{3x + 6}$$

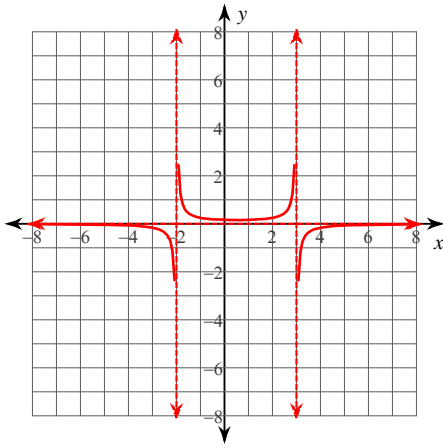


## Graphing Rationals - More Practice

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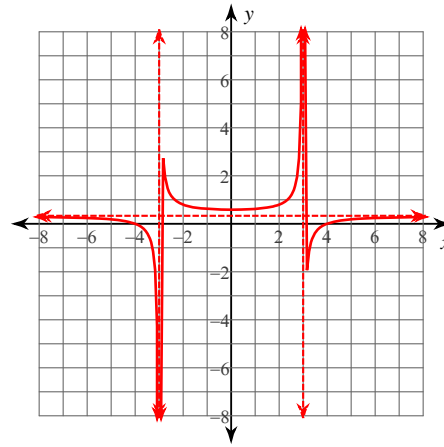
**Identify the holes, vertical asymptotes, horizontal asymptote, and domain of each. Then sketch the graph.**

1)  $f(x) = -\frac{1}{x^2 - x - 6}$



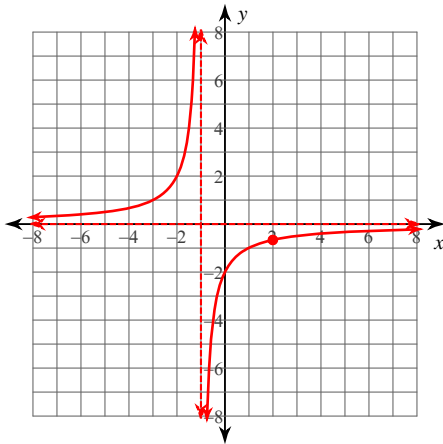
Vertical Asym.:  $x = -2, x = 3$   
 Holes: None  
 Horz. Asym.:  $y = 0$   
 Domain:  
 All reals except  $-2, 3$

2)  $f(x) = \frac{x^2 - 16}{3x^2 - 27}$



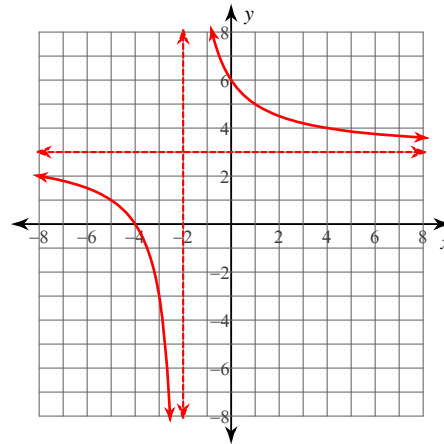
Vertical Asym.:  $x = -3, x = 3$   
 Holes: None  
 Horz. Asym.:  $y = \frac{1}{3}$   
 Domain:  
 All reals except  $-3, 3$

3)  $f(x) = \frac{-2x + 4}{x^2 - x - 2}$



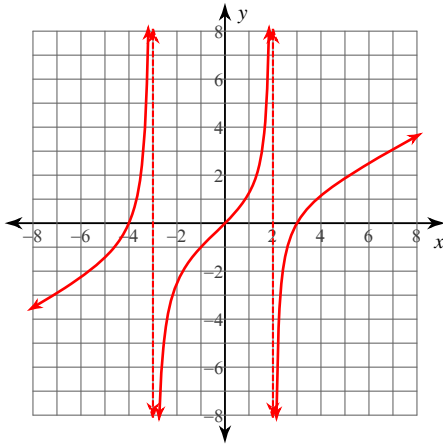
Vertical Asym.:  $x = -1$   
 Holes:  $x = 2$   
 Horz. Asym.:  $y = 0$   
 Domain:  
 All reals except  $-1, 2$

4)  $f(x) = \frac{3x + 12}{x + 2}$



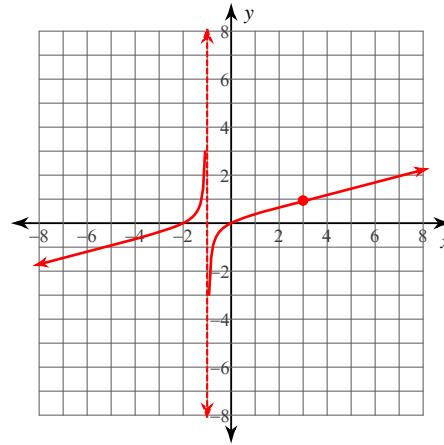
Vertical Asym.:  $x = -2$   
 Holes: None  
 Horz. Asym.:  $y = 3$   
 Domain:  
 All reals except  $-2$

$$5) f(x) = \frac{x^3 + x^2 - 12x}{2x^2 + 2x - 12}$$



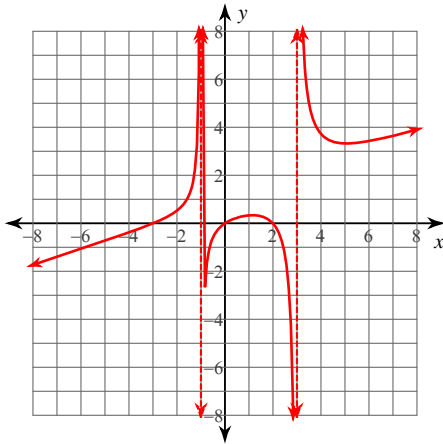
Vertical Asym.:  $x = -3, x = 2$   
 Holes: None  
 Horz. Asym.: None  
 Domain:  
 All reals except  $-3, 2$

$$6) f(x) = \frac{x^3 - x^2 - 6x}{4x^2 - 8x - 12}$$



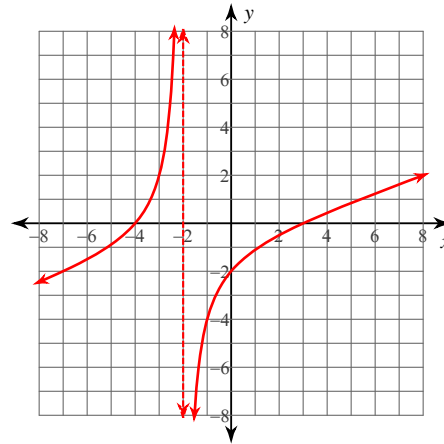
Vertical Asym.:  $x = -1$   
 Holes:  $x = 3$   
 Horz. Asym.: None  
 Domain:  
 All reals except  $-1, 3$

$$7) f(x) = \frac{x^3 + x^2 - 6x}{3x^2 - 6x - 9}$$



Vertical Asym.:  $x = -1, x = 3$   
 Holes: None  
 Horz. Asym.: None  
 Domain:  
 All reals except  $-1, 3$

$$8) f(x) = \frac{x^2 + x - 12}{3x + 6}$$



Vertical Asym.:  $x = -2$   
 Holes: None  
 Horz. Asym.: None  
 Domain:  
 All reals except  $-2$