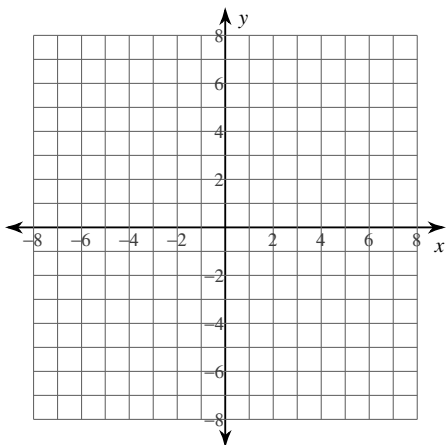


Assignment

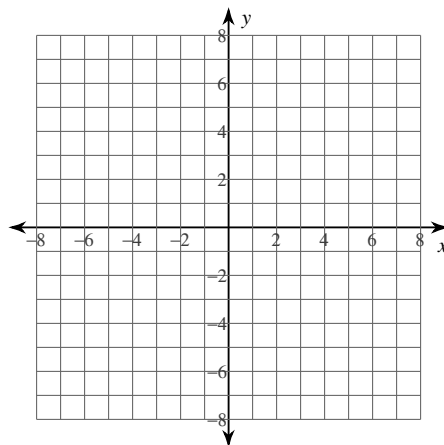
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Graph each function.

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

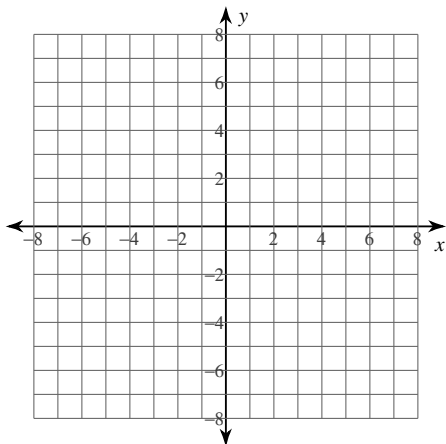


2) $f(x) = \frac{3}{x-2} + 1$

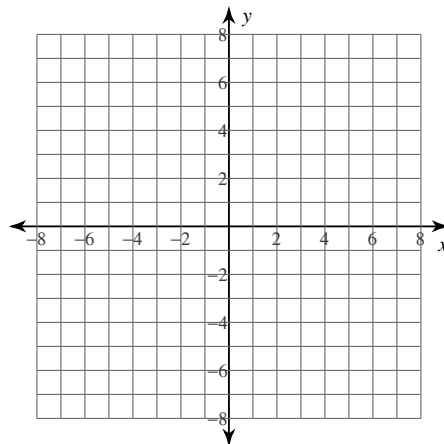


Identify the points of discontinuity, holes, vertical asymptotes, and horizontal asymptote of each. Then sketch the graph.

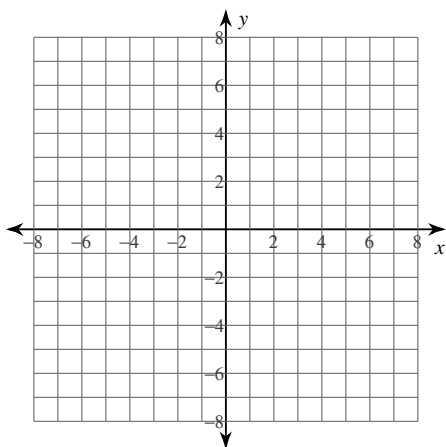
3) $f(x) = \frac{2}{x^2 + x - 2}$



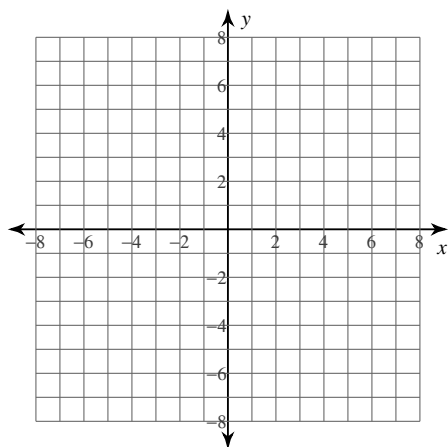
4) $f(x) = \frac{x-4}{-2x-2}$



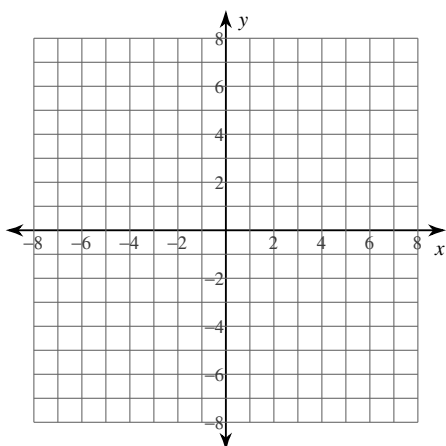
$$5) f(x) = \frac{3x-6}{x-1}$$



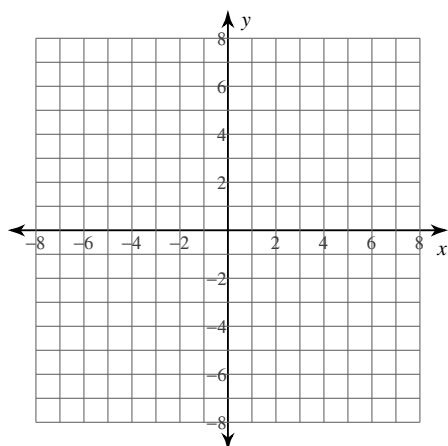
$$6) f(x) = \frac{x^2 + 2x - 3}{-4x - 8}$$



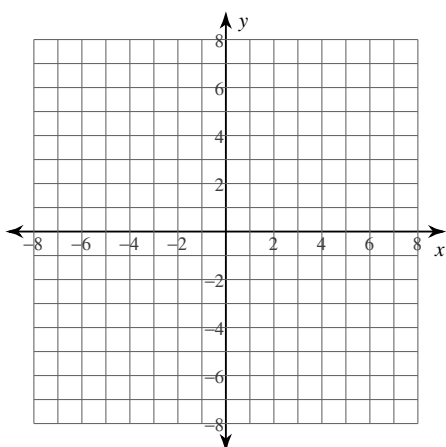
$$7) f(x) = \frac{4x^2 + 16x}{x^3 + 2x^2 - 3x}$$



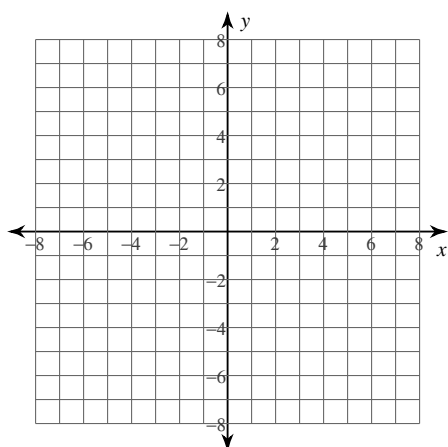
$$8) f(x) = \frac{x^2 - 2x - 8}{-4x}$$



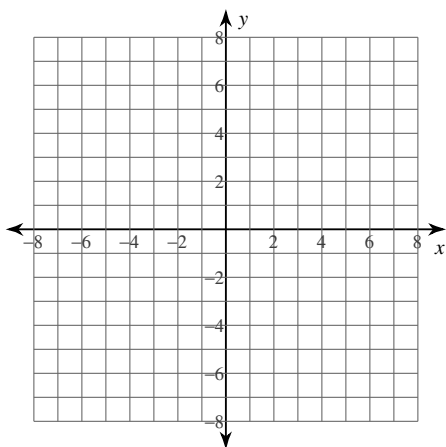
$$9) f(x) = \frac{x+1}{-x-2}$$



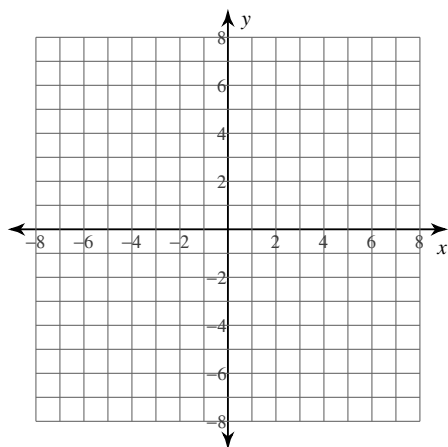
$$10) f(x) = -\frac{2}{x^2 - 9}$$



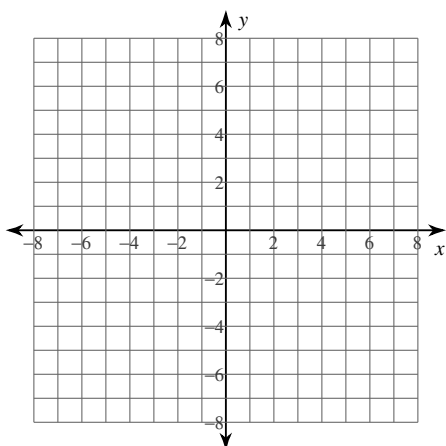
$$11) f(x) = \frac{x^3 - 6x^2 + 8x}{-4x^2 + 20x - 24}$$



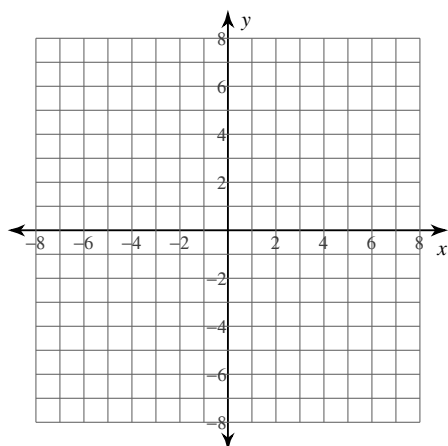
$$12) f(x) = \frac{x^3 - 3x^2 + 2x}{-3x^2 + 9x}$$



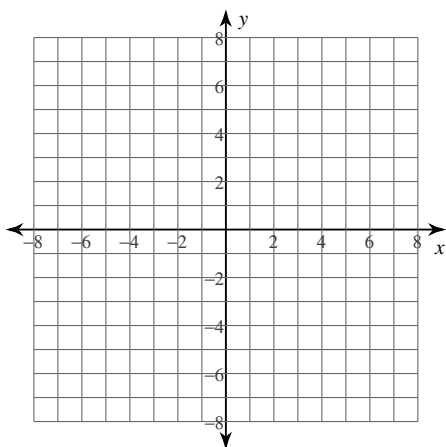
$$13) f(x) = \frac{x^2 + 3x}{-3x^2 + 3x}$$



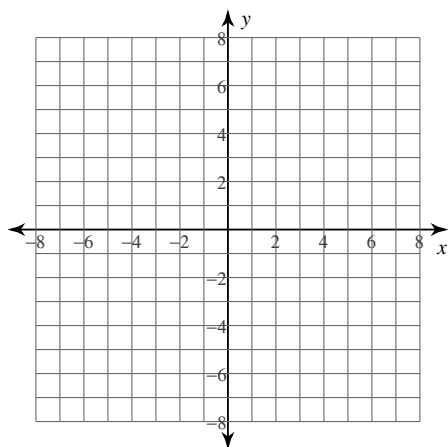
$$14) f(x) = \frac{-x^2 + 5x - 6}{x^2 + x - 2}$$



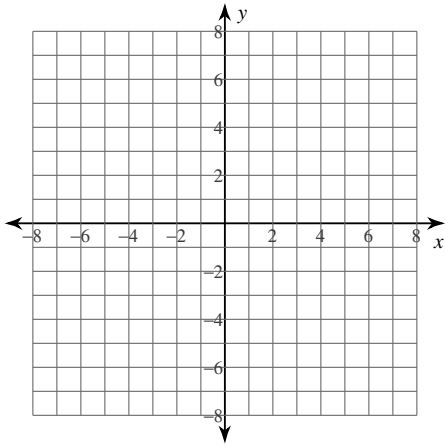
$$15) f(x) = \frac{x^3 + x^2 - 2x}{-3x^2 - 3x}$$



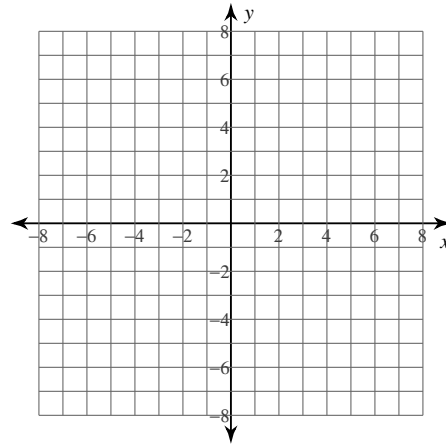
$$16) f(x) = \frac{x^3 - x^2 - 12x}{-3x^2 + 3x}$$



$$17) f(x) = \frac{x^3 + 2x^2 - 8x}{4x^2 - 8x - 12}$$

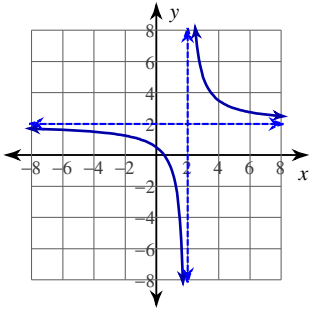


$$18) f(x) = \frac{x+2}{x}$$

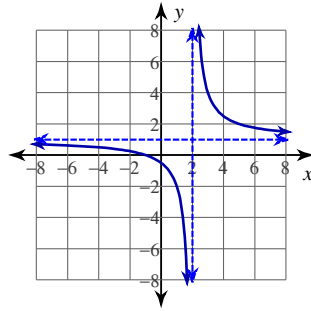


Answers to Assignment (ID: 1)

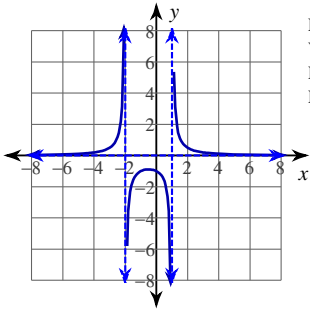
1)



2)

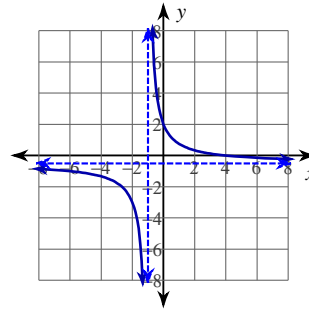


3)



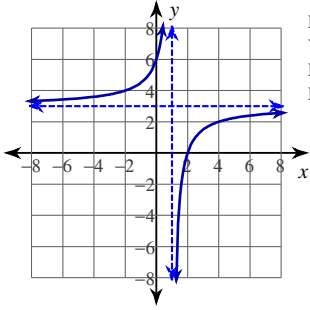
Discontinuities: 1, -2
Vertical Asym.: $x = 1, x = -2$
Holes: None
Horz. Asym.: $y = 0$

4)



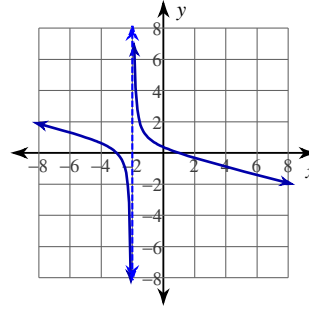
Discontinuities: -1
Vertical Asym.: $x = -1$
Holes: None
Horz. Asym.: $y = -\frac{1}{2}$

5)



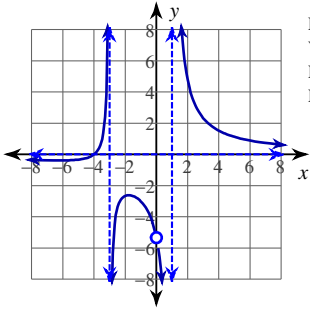
Discontinuities: 1
Vertical Asym.: $x = 1, x = -2$
Holes: None
Horz. Asym.: $y = 3$

6)



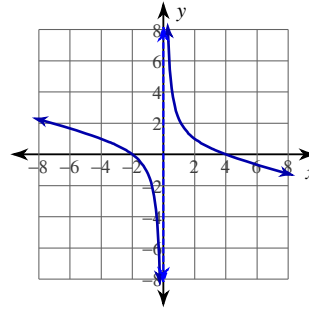
Discontinuities: -2
Vertical Asym.: $x = -2$
Holes: None
Horz. Asym.: None

7)



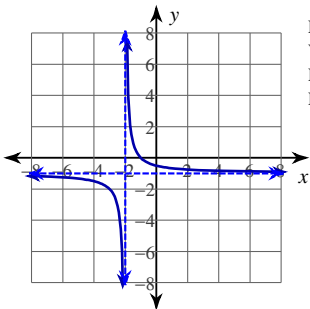
Discontinuities: 1, -3, 0
Vertical Asym.: $x = 1, x = -3$
Holes: $x = 0$
Horz. Asym.: $y = 0$

8)



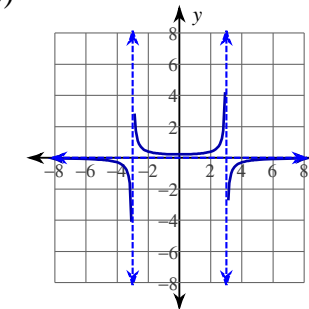
Discontinuities: 0
Vertical Asym.: $x = 0$
Holes: None
Horz. Asym.: None

9)



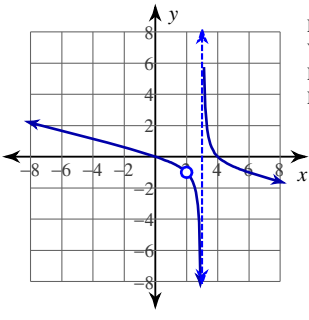
Discontinuities: -2
Vertical Asym.: $x = -2$
Holes: None
Horz. Asym.: $y = -1$

10)



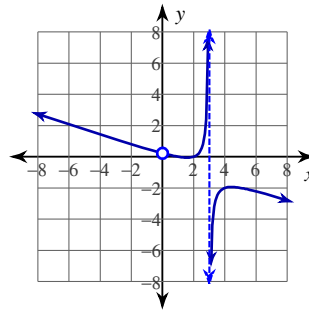
Discontinuities: 3, -3
Vertical Asym.: $x = 3, x = -3$
Holes: None
Horz. Asym.: $y = 0$

11)



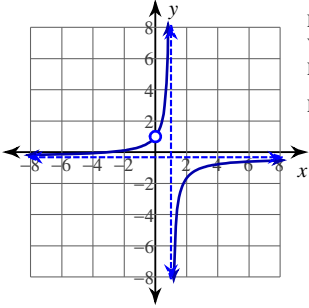
Discontinuities: 3, 2
 Vertical Asym.: $x = 3$
 Holes: $x = 2$
 Horz. Asym.: None

12)



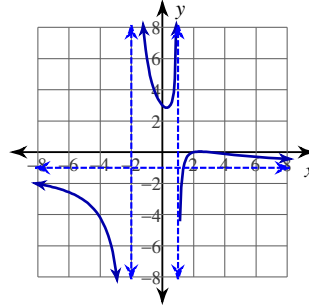
Discontinuities: 3, 0
 Vertical Asym.: $x = 3$
 Holes: $x = 0$
 Horz. Asym.: None

13)



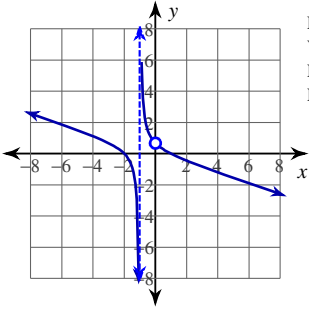
Discontinuities: 1, 0
 Vertical Asym.: $x = 1$
 Holes: $x = 0$
 Horz. Asym.: $y = -\frac{1}{3}$

14)



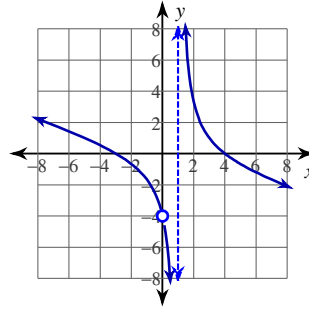
Discontinuities: 1, -2
 Vertical Asym.: $x = 1, x = -2$
 Holes: None
 Horz. Asym.: $y = -1$

15)



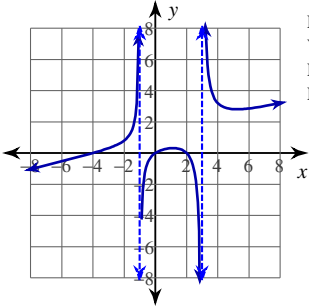
Discontinuities: -1, 0
 Vertical Asym.: $x = -1$
 Holes: $x = 0$
 Horz. Asym.: None

16)



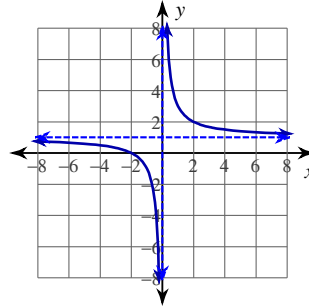
Discontinuities: 1, 0
 Vertical Asym.: $x = 1$
 Holes: $x = 0$
 Horz. Asym.: None

17)



Discontinuities: 3, -1
 Vertical Asym.: $x = 3, x = -1$
 Holes: None
 Horz. Asym.: None

18)



Discontinuities: 0
 Vertical Asym.: $x = 0$
 Holes: None
 Horz. Asym.: $y = 1$