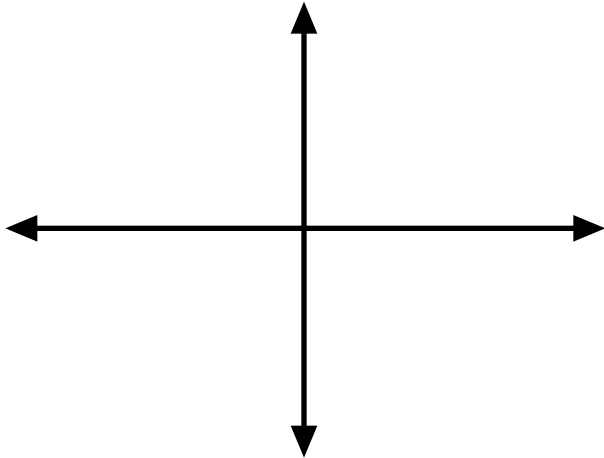
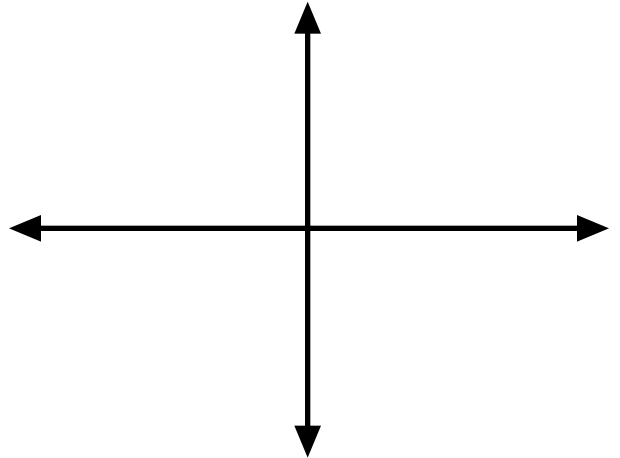


Graph each function. Label the roots and asymptotes.

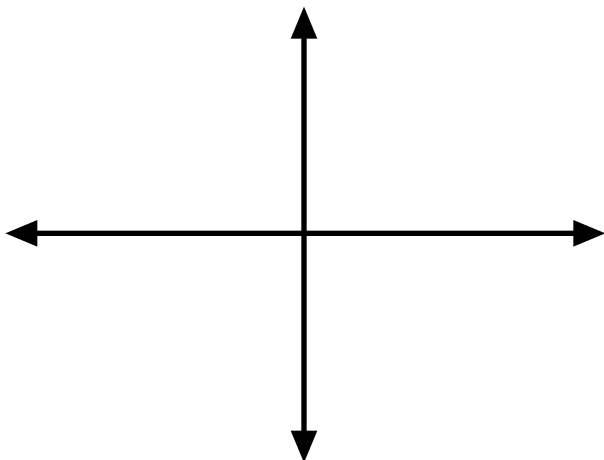
1. $f(x) = \frac{2x(x+3)}{(x+1)^2}$



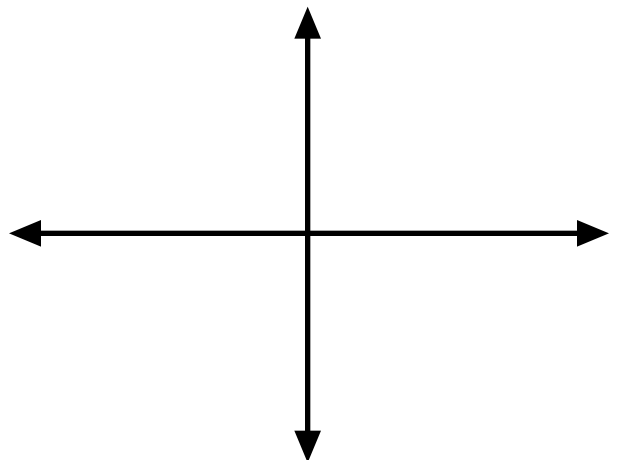
2. $f(x) = \frac{-2x^2(x-4)(x+3)}{(x-1)^4}$



3. $f(x) = \frac{-2(x+4)(x-3)^3}{(x+1)^3}$

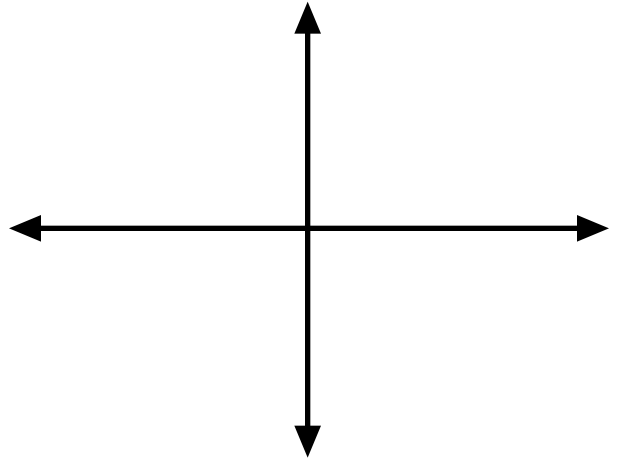
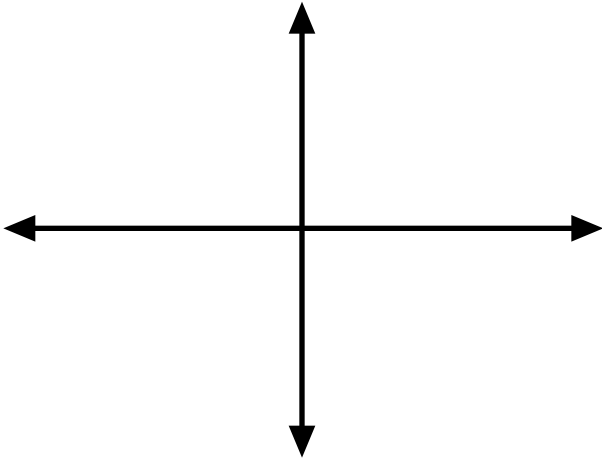


4. $f(x) = \frac{2x^2(x+2)^2}{(x+3)^3(x-1)}$



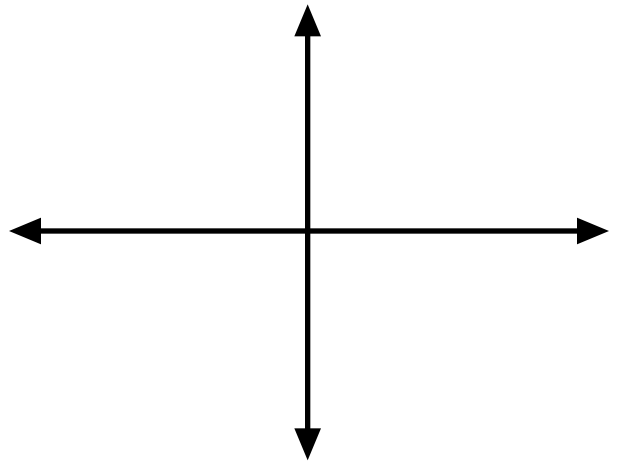
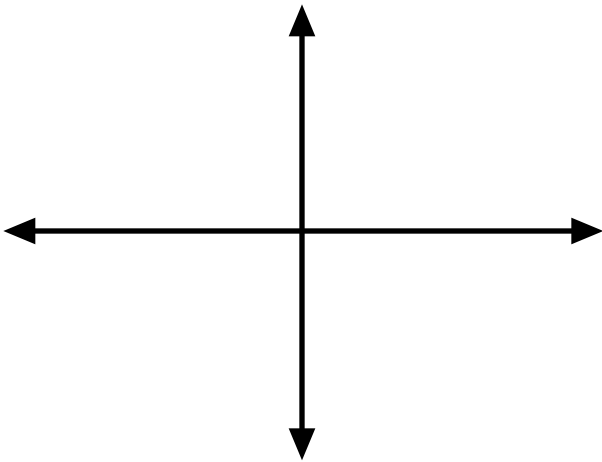
5 $f(x) = \frac{-2(x-4)^5 (x+3)}{x^3}$

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

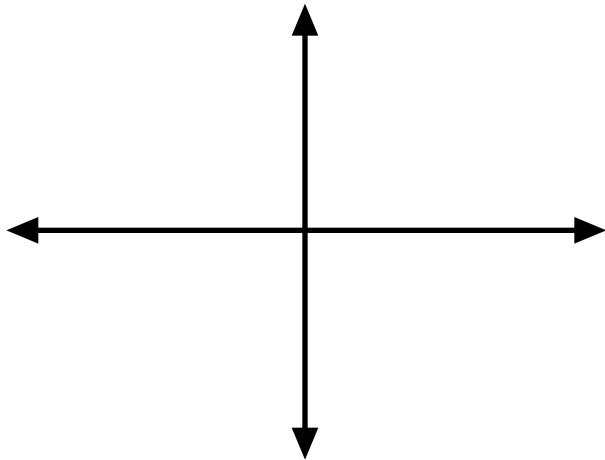


7. $f(x) = \frac{-2(x-4)^2 (x+3)}{(x-3) (x-1)^5}$

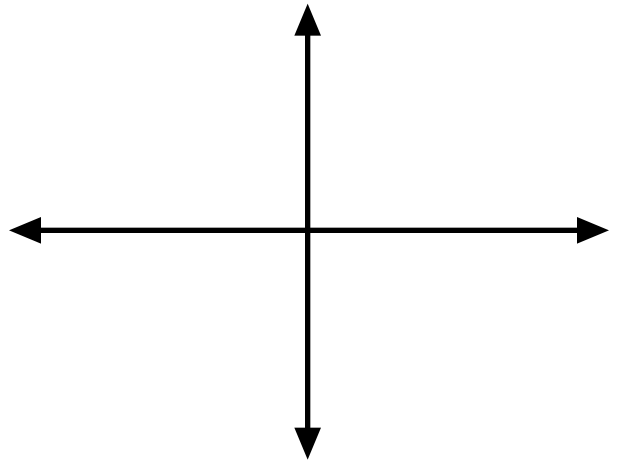
8. $f(x) = \frac{2x^2 (x+3)^6}{(x-1)^3 (x+2)}$



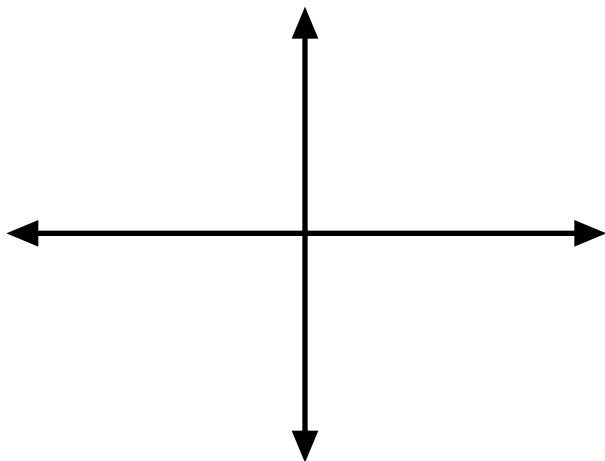
9. $f(x) = \frac{-2(x+4)^2(x-4)^3}{(x+2)}$



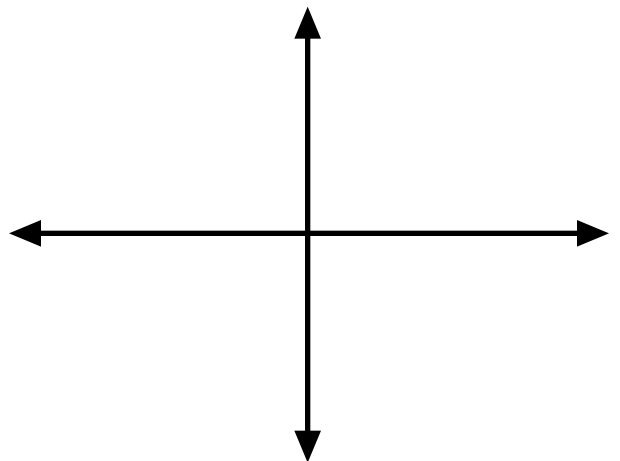
10. $f(x) = \frac{(x-2)(x+5)}{x^2(x+2)^3}$



11. $f(x) = \frac{3x^2(x+3)(x+4)}{(x+1)^5(x-2)}$

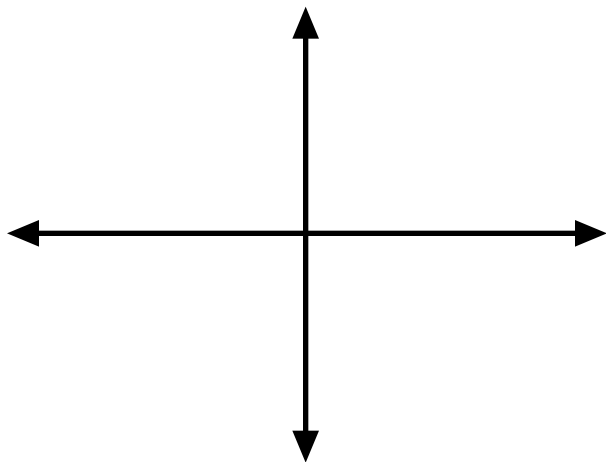
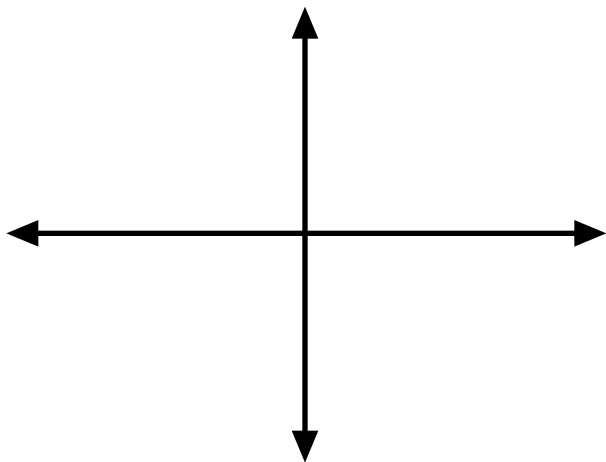


12. $f(x) = \frac{x^3(x-2)^2}{(x-3)^2(x+1)^2}$



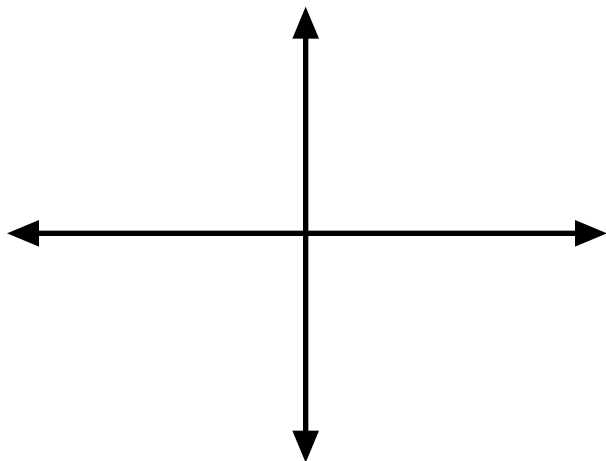
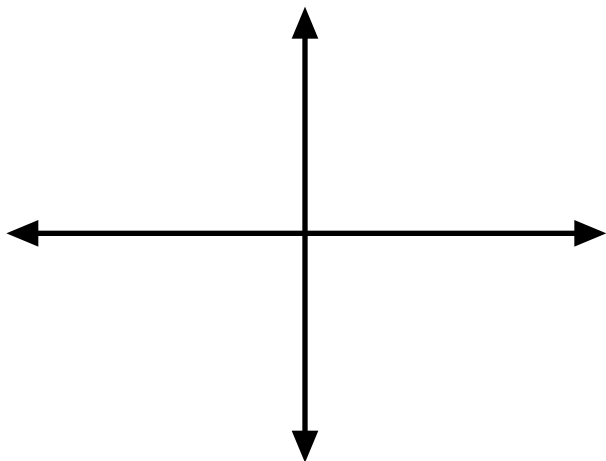
13. $f(x) = \frac{-2x(x+3)^5}{(x-1)^2(x+2)}$

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



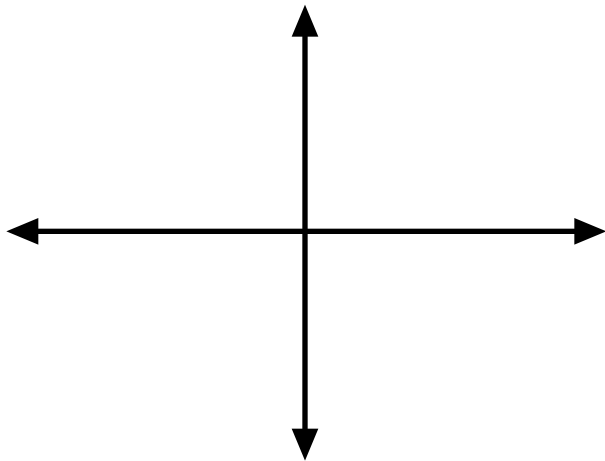
15. $f(x) = \frac{-2(x+3)}{(x-1)^3(x-3)}$

16. $f(x) = \frac{-2x^2}{(2x-1)(x-4)}$

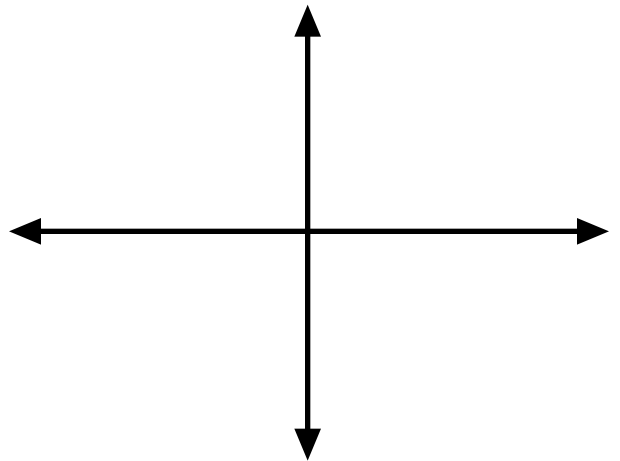


Rational Functions with Holes

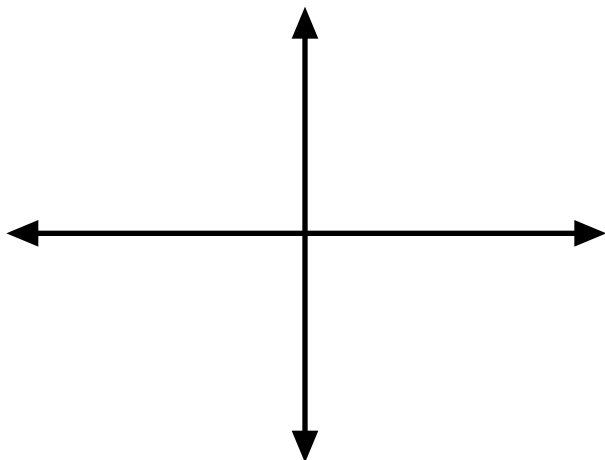
17. $f(x) = \frac{(x+4)(x+1)}{(x-1)^3(x+1)}$



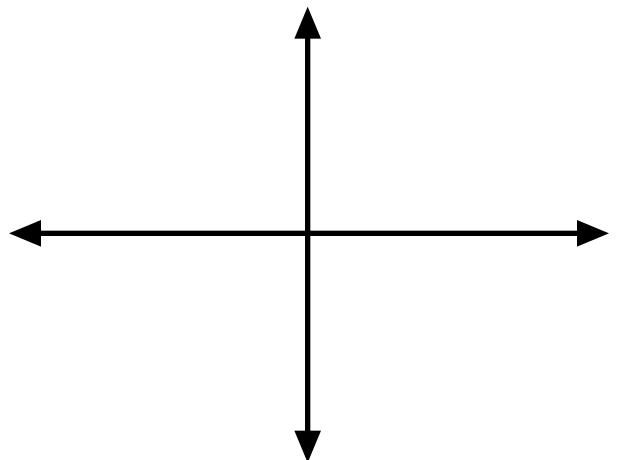
18. $f(x) = \frac{x^2(x-1)^2}{(x+2)(x-1)^2}$



19. $f(x) = \frac{-x(x+4)}{x(x-5)^2}$

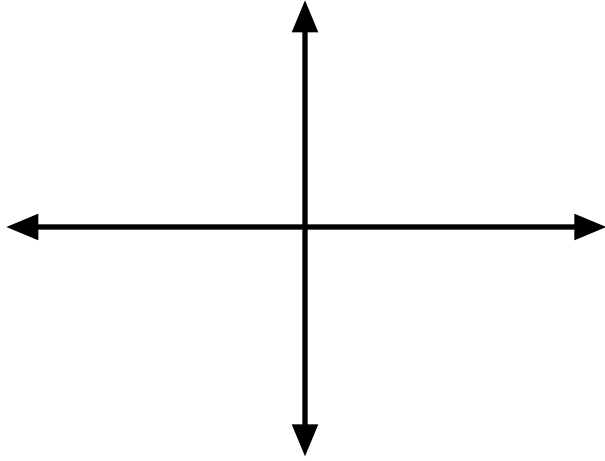


20. $f(x) = \frac{-3x^2(x+1)}{(x-2)(x+1)}$

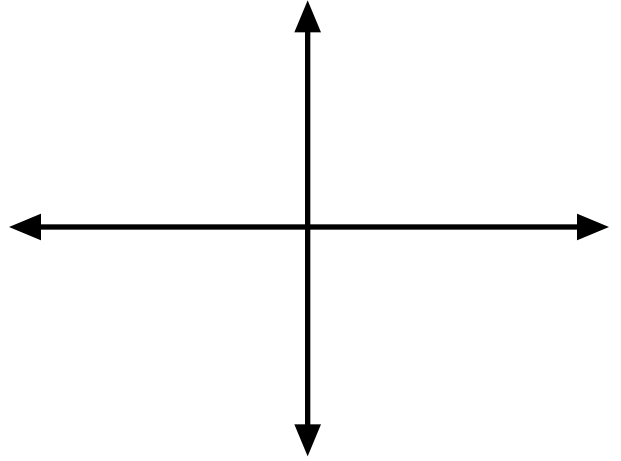


Rational Functions with Holes

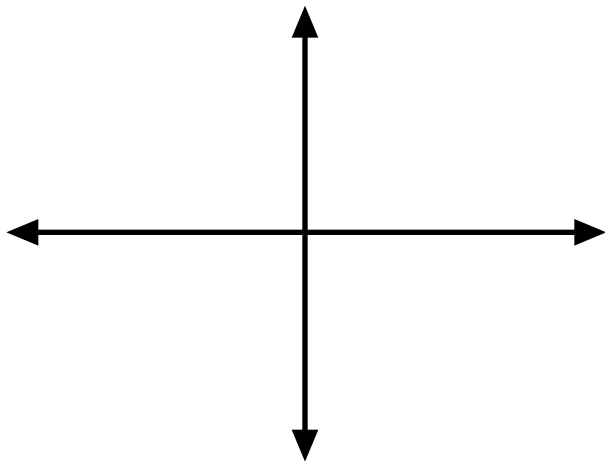
21. $f(x) = \frac{x^2 - x - 12}{x^2 - 9}$



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



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



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

