

Graphing Rational Functions

Identify the points of discontinuity, holes, vertical asymptotes, x-intercepts, and horizontal asymptote of each.

1) $f(x) = \frac{1}{3x^2 + 3x - 18}$

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

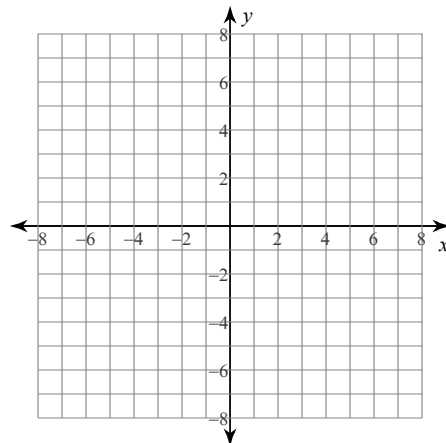
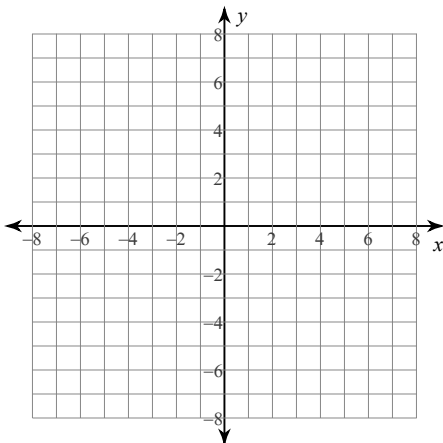
3) $f(x) = \frac{x^3 - x^2 - 6x}{-3x^2 - 3x + 18}$

4) $f(x) = \frac{x^2 + x - 6}{-4x^2 - 16x - 12}$

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

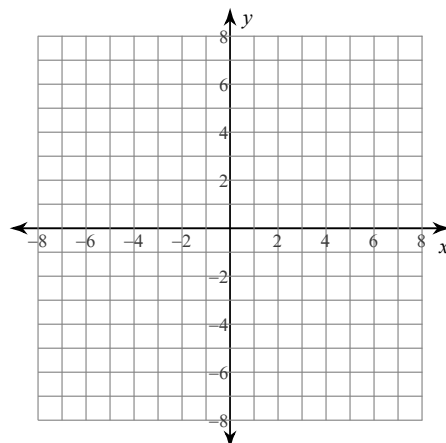
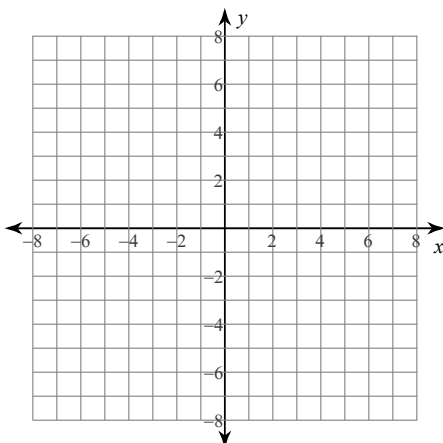
5) $f(x) = -\frac{4}{x^2 - 3x}$

6) $f(x) = \frac{x - 4}{-4x - 16}$

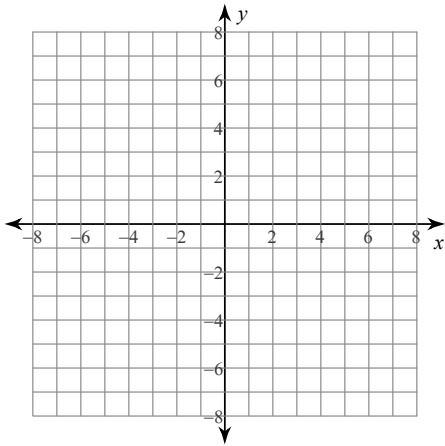


7) $f(x) = \frac{x + 4}{-2x - 6}$

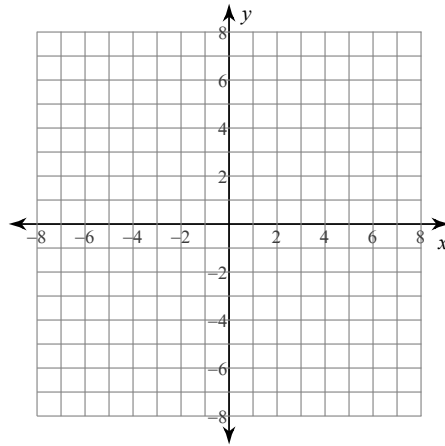
8) $f(x) = \frac{x^3 - 9x}{3x^2 - 6x - 9}$



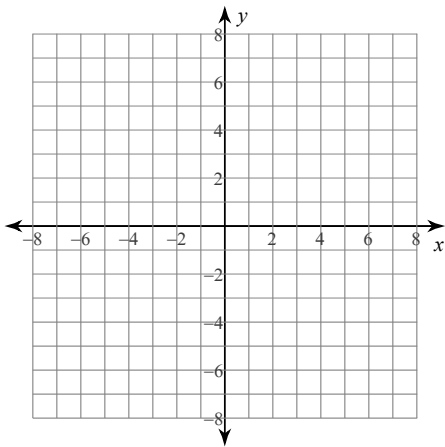
$$9) f(x) = \frac{3x^2 - 12x}{x^2 - 2x - 3}$$



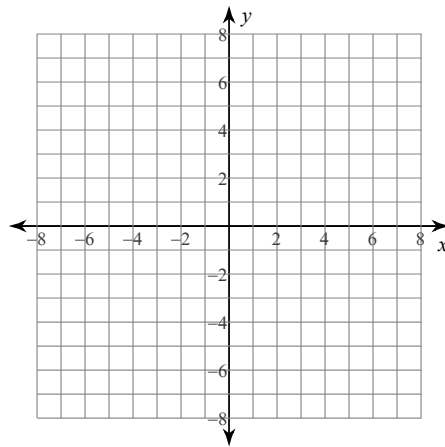
$$10) f(x) = \frac{x^3 - 16x}{-4x^2 + 4x + 24}$$



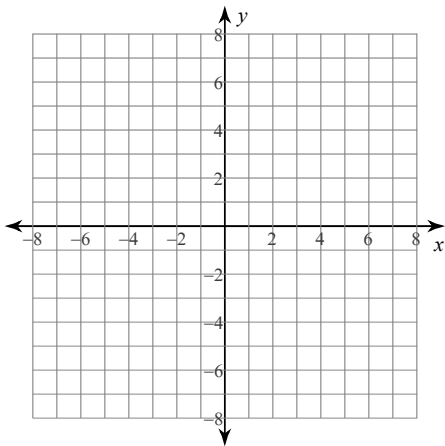
$$11) f(x) = \frac{x^2 + 2x}{-4x + 8}$$



$$12) f(x) = \frac{x + 2}{2x + 6}$$



$$13) f(x) = \frac{2x^2 + 10x + 12}{x^2 + 3x + 2}$$



$$14) f(x) = \frac{3}{x - 2}$$

