Graphing Rational Functions Practice

Identify the vertical asymptotes, horizontal asymptotes, domain, and range of each function

1. $f(x) = \dfrac{3}{x-1} - 1$

Vertical asym : _____

Horizontal asym : _____

Domain : _____

Range : _____

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

Vertical asym : _____

Horizontal asym : _____

Domain : _____

Range : _____

Identify the points of discontinuity, holes and x-intercepts of each function

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

Points of discontinuity : _____

Holes: _____

x-intercepts : _____

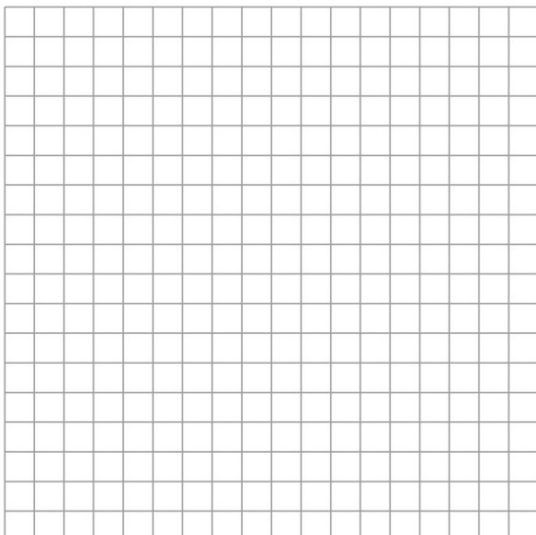3. $f(x) = \dfrac{x^3 - x^2 - 6x}{-3x^2 - 3x + 18}$
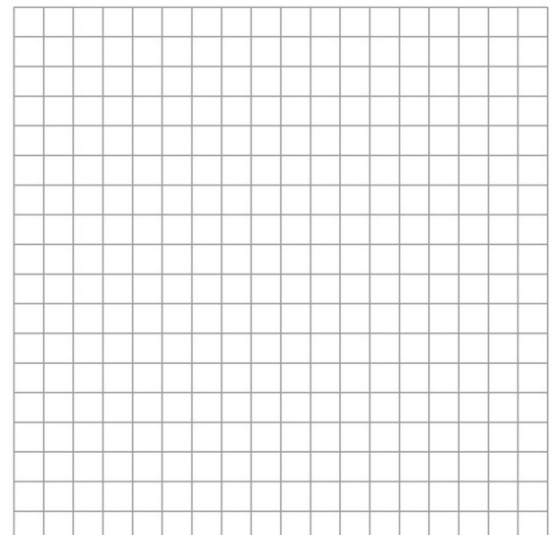
Points of discontinuity : _____

Holes: _____

x-intercepts : _____

Graph each function

5. $f(x) = \dfrac{x+4}{-2x+8}$

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

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Answers

1. $f(x) = \dfrac{3}{x-1} - 1$

    Vertical asym : _____ $x = 1$ _____

    Horizontal asym : _____ $y = -1$ _____

    Domain : _All reals except 1_

    Range : _All reals except -1_

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

    Vertical asym : _____ $x = 0$ _____

    Horizontal asym : _____ $y = 0$ _____

    Domain : _All reals except 0_

    Range : _All reals except 0_

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

    Points of discontinuity : _-1, -3_
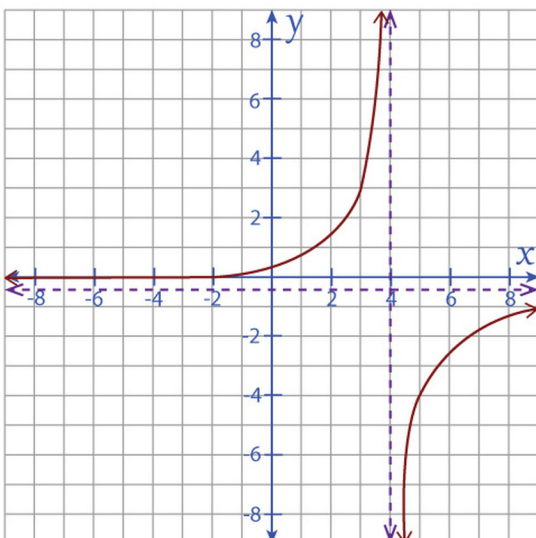
    Holes: _____ $x = -3, x = -\dfrac{5}{8}$ _____

    x-intercepts : _____ 2 _____

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

    Points of discontinuity : _2, -3_

    Holes: _____ None _____

    x-intercepts : _0, -2, 3_

5. $f(x) = \dfrac{x + 4}{-2x + 8}$

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