

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

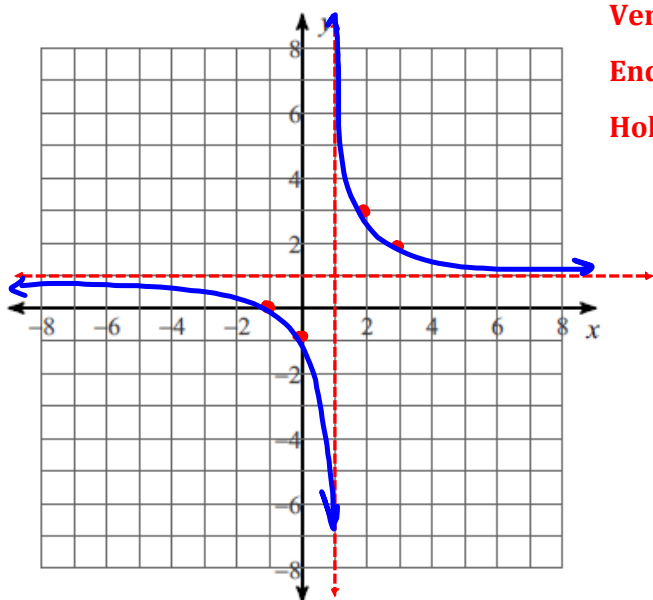
**x-intercept: (-1, 0)**

**y-intercept: (0, -1)**

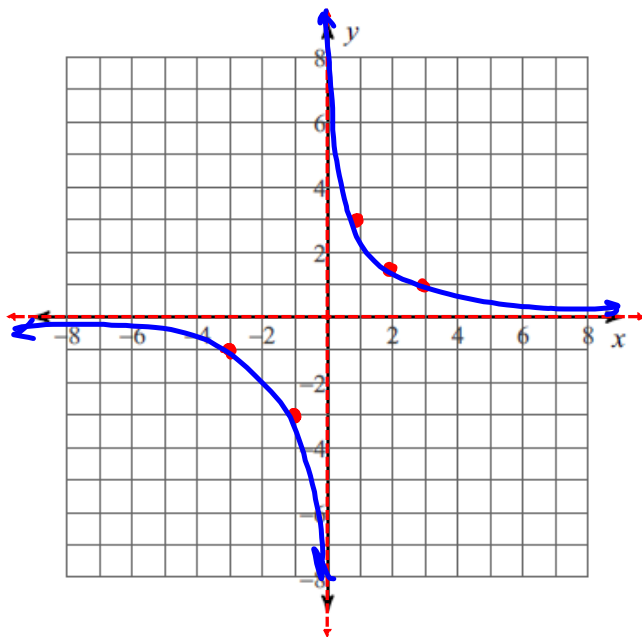
**Vert. Asymptote(s):  $x = 1$**

**End Behavior Asymptote:  $y = 1$**

**Hole(s): None**



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



**x-intercept: None**

**y-intercept: None**

**Vert. Asymptote(s):  $x = 0$**

**End Behavior Asymptote:  $y = 0$**

**Hole(s): None**

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

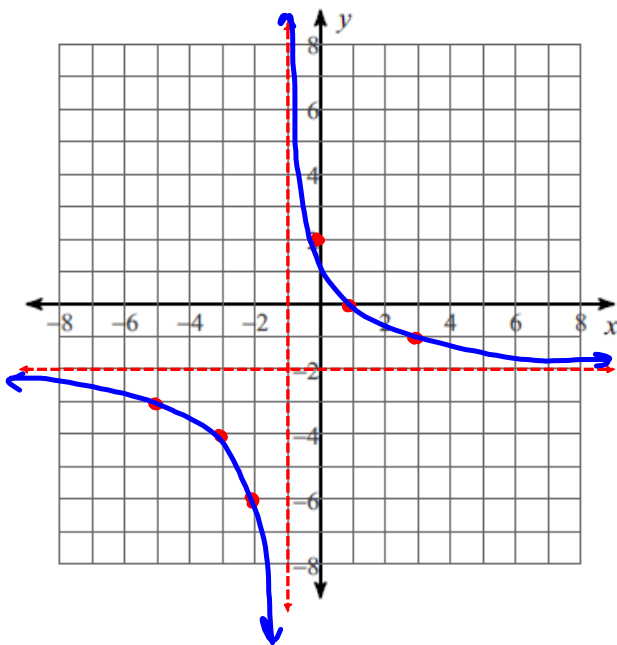
**x-intercept: (1, 0)**

**y-intercept: (0, 2)**

**Vert. Asymptote(s):  $x = -1$**

**End Behavior Asymptote:  $y = -2$**

**Hole(s): None**



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

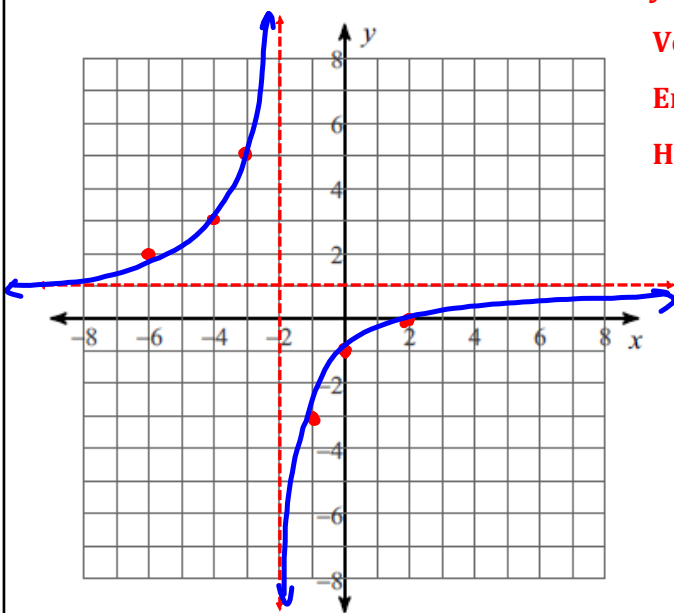
**x-intercept: (2, 0)**

**y-intercept: (0, -1)**

**Vert. Asymptote(s):  $x = -2$**

**End Behavior Asymptote:  $y = 1$**

**Hole(s): None**



$$5) f(x) = \frac{2}{x-3} - 1$$

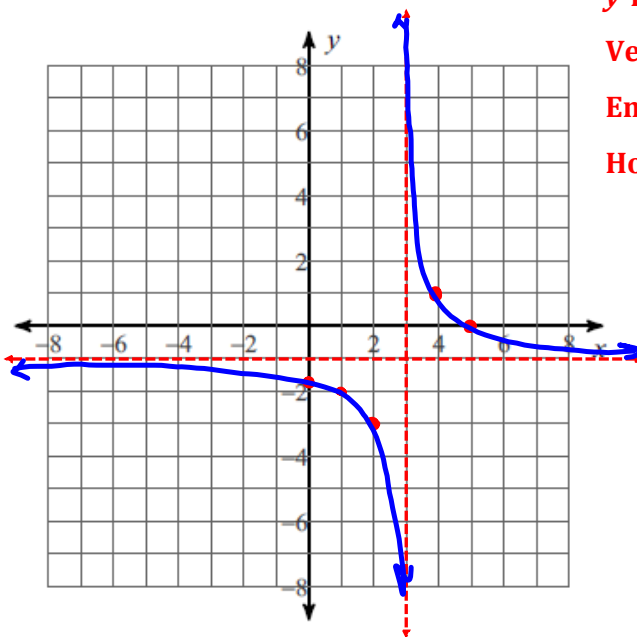
**x-intercept: (5, 0)**

**y-intercept: (0, -5/3)**

**Vert. Asymptote(s):  $x = 3$**

**End Behavior Asymptote:  $y = -1$**

**Hole(s): None**



$$6) f(x) = \frac{-3x^2 - 6x + 24}{x^2 + 3x - 4} = \frac{-3(x - 2)(x + 4)}{(x - 1)(x + 4)}$$

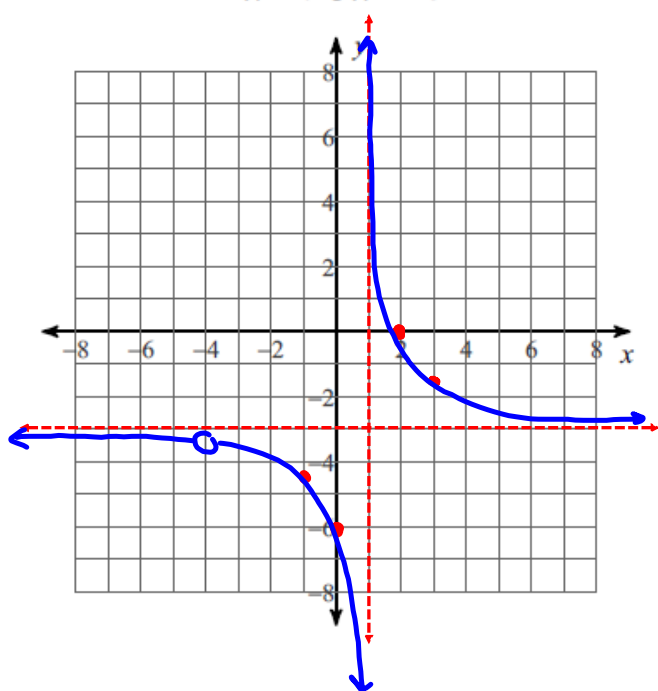
**x-intercept: (2, 0)**

**y-intercept: (0, -6)**

**Vert. Asymptote(s):  $x = 1$**

**End Behavior Asymptote:  $y = -3$**

**Hole(s):  $x = -4$**



$$7) f(x) = \frac{x^3 - 5x^2 + 4x}{3x^2 - 6x - 9} = \frac{x(x - 4)(x - 1)}{3(x + 1)(x - 3)}$$

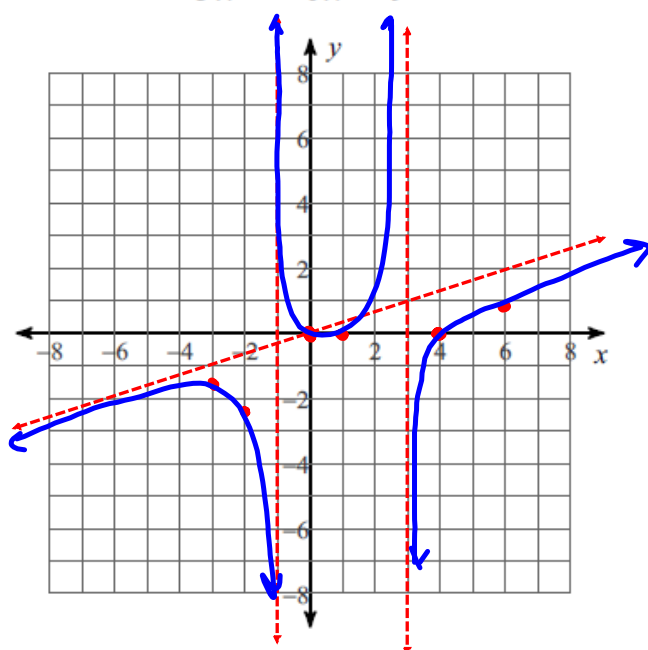
**x-intercept: (0, 0), (1, 0), (4, 0)**

**y-intercept: (0, 0)**

**Vert. Asymptote(s):  $x = -1, x = 3$**

**End Behavior Asymptote:  $y = (1/3)x$**

**Hole(s): None**



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

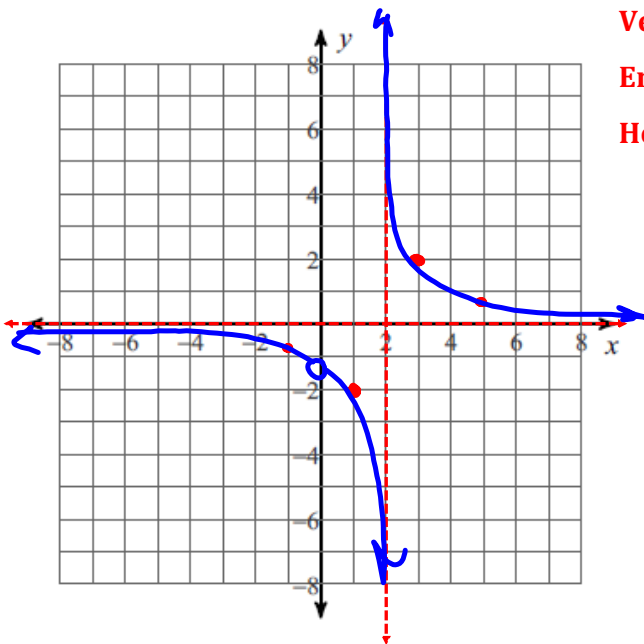
**x-intercept: None**

**y-intercept: None**

**Vert. Asymptote(s):  $x = 2$**

**End Behavior Asymptote:  $y = 0$**

**Hole(s):  $x = 0$**





$$9) f(x) = \frac{-x^2 - x + 6}{x^2 - 2x - 3} = \frac{-(x - 2)(x + 3)}{(x + 1)(x - 3)}$$

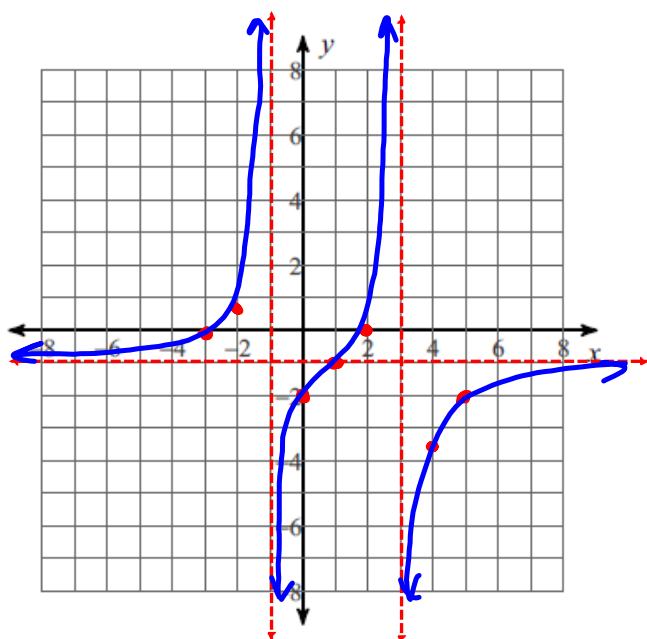
**x-intercept: (-3, 0), (2, 0)**

**y-intercept: (0, -2)**

**Vert. Asymptote(s):  $x = -1, x = 3$**

**End Behavior Asymptote:  $y = -1$**

**Hole(s): None**



$$10) f(x) = \frac{x - 4}{-x - 1}$$

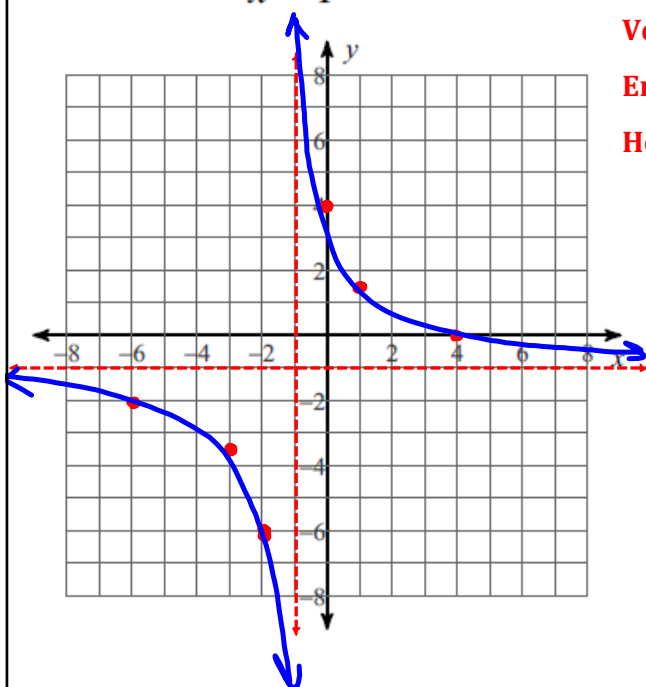
**x-intercept: (4, 0)**

**y-intercept: (0, 4)**

**Vert. Asymptote(s):  $x = -1$**

**End Behavior Asymptote:  $y = -1$**

**Hole(s): None**



$$11) f(x) = \frac{x^2 - 6x + 8}{4x^2 + 8x - 32} = \frac{(x - 2)(x - 4)}{4(x + 4)(x - 2)}$$

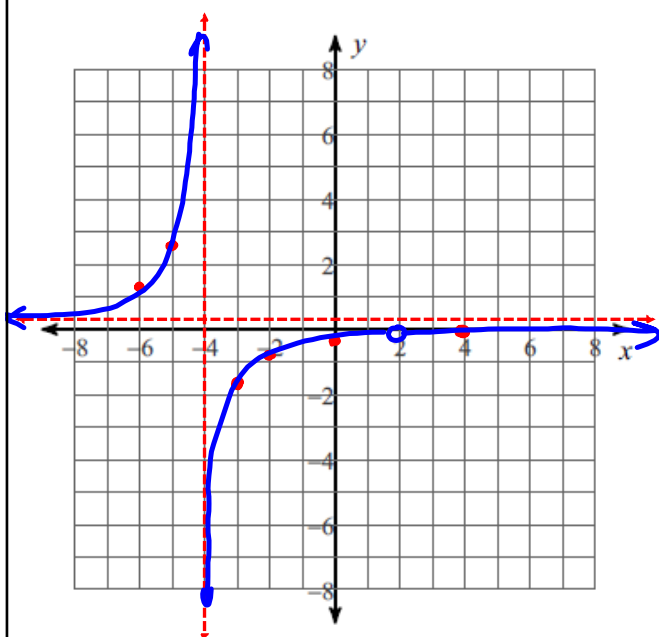
**x-intercept: (4, 0)**

**y-intercept: (0, -1/4)**

**Vert. Asymptote(s):  $x = -4$**

**End Behavior Asymptote:  $y = 1/4$**

**Hole(s):  $x = 2$**



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

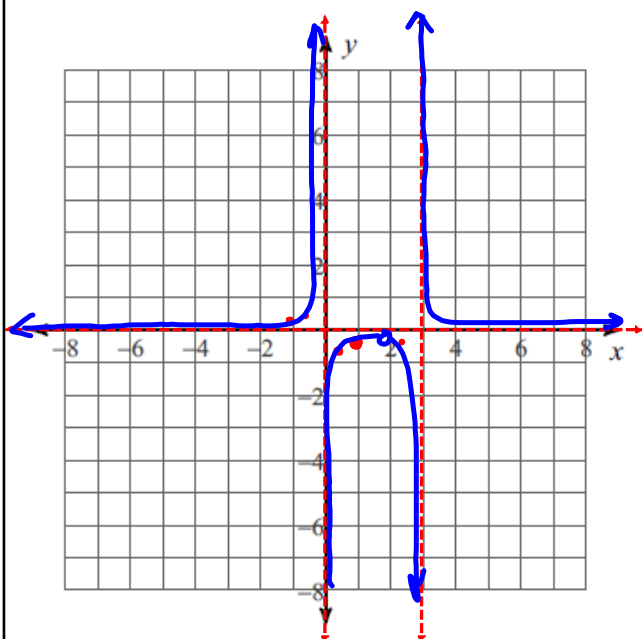
**x-intercept: None**

**y-intercept: None**

**Vert. Asymptote(s):  $x = 0, x = 3$**

**End Behavior Asymptote:  $y = 0$**

**Hole(s):  $x = 2$**



$$13) f(x) = \frac{x^2 - 16}{-3x + 6} = \frac{(x - 4)(x + 4)}{-3(x - 2)}$$

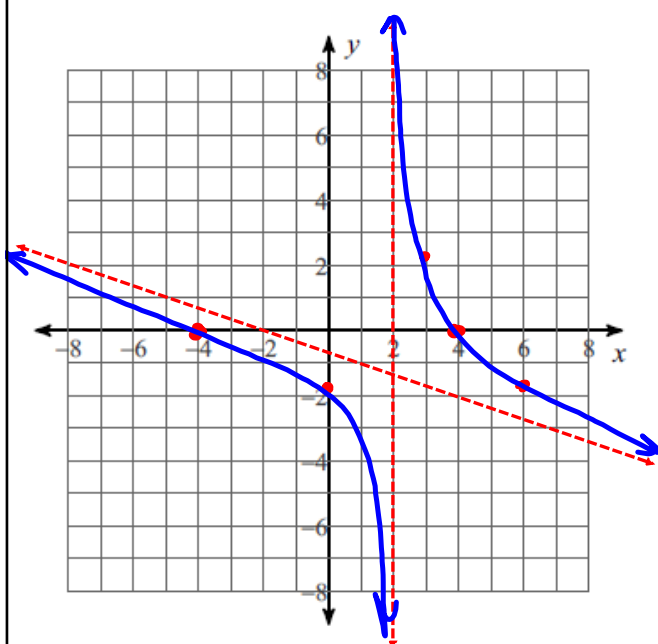
**x-intercept:  $x = 4, x = -4$**

**y-intercept:  $y = -8/3$**

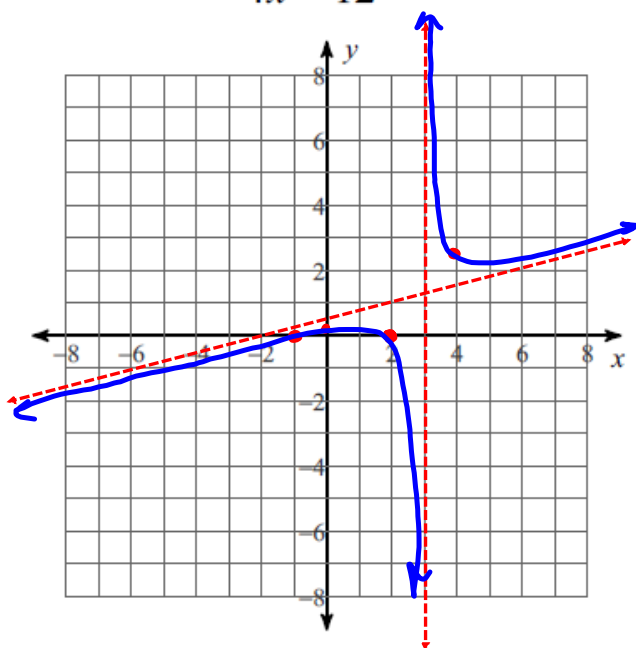
**Vert. Asymptote(s):  $x = 2$**

**End Behavior Asymptote:  $y = (-1/3)x - (2/3)$**

**Hole(s): None**



$$14) f(x) = \frac{x^2 - x - 2}{4x - 12} = \frac{(x - 2)(x + 1)}{4(x - 3)}$$



**x-intercept: (-1, 0), (2, 0)**

**y-intercept: (0, 1/6)**

**Vert. Asymptote(s): x = 3**

**End Behavior Asymptote:**

**$y = (1/4)x + (1/2)$**

**Hole(s): None**

$$15) f(x) = \frac{x^2 - 3x + 2}{4x^2 - 20x + 24} = \frac{(x - 2)(x - 1)}{4(x - 2)(x - 3)}$$

**x-intercept: (1, 0)**

**y-intercept: (0, 1/12)**

**Vert. Asymptote(s):  $x = 3$**

**End Behavior Asymptote:  $y = 1/4$**

**Hole(s):  $x = 2$**

