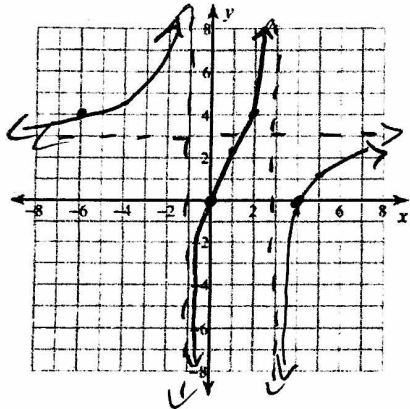


4.8 - More Graphs of Rational Functions

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

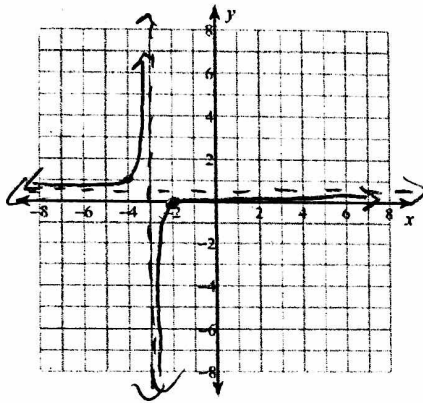
1. $f(x) = \frac{3x^2 - 12x}{x^2 - 2x - 3} \cdot \frac{3x(x-4)}{(x-3)(x+1)}$

Hole: none
VA: $x=3, x=-1$
X-int: $(0,0), (4,0)$
HA: $y=3$



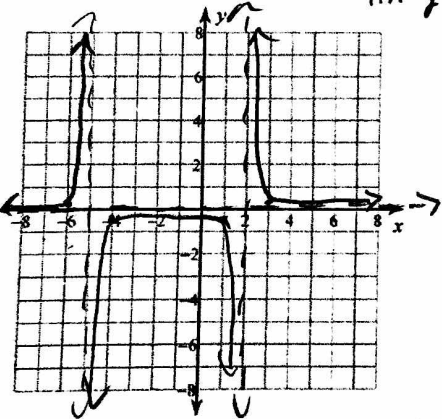
2. $f(x) = \frac{x+2}{2x+6} \cdot \frac{(x+2)}{2(x+3)}$

Hole: none
VA: $x=-3$
X-int: $(-2,0)$
HA: $y=1/2$



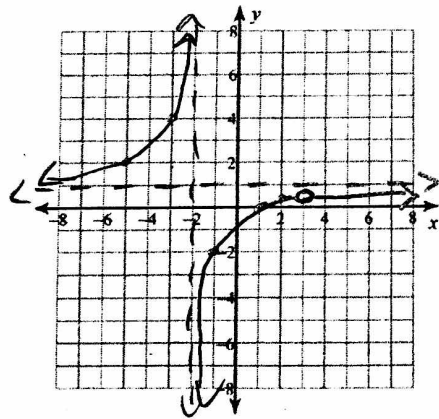
3. $f(x) = \frac{2}{x^2 + 3x - 10} \cdot \frac{2}{(x+5)(x-2)}$

Hole: none
VA: $x=-5, x=2$
X-int: none
HA: $y=0$

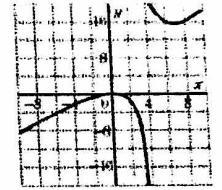


4. $f(x) = \frac{2-4x+3}{x^2-x-6} \cdot \frac{(x-3)(x-1)}{(x-3)(x+2)}$

Hole: $x=3$
VA: $x=-2$
X-int: $(1,0)$
HA: $y=1$



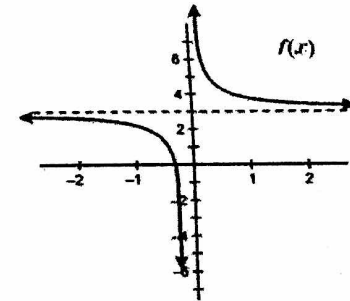
6. Which of the following is the equation of an asymptote for the function graphed?



- A $x = -4$
- B $y = 0$
- C $x = 4$
- D $y = 4$

7. What value(s) are restricted from the range of $f(x)$?

- A 1
- B 0
- C 3
- D no restricted values



8. A value of x that makes the expression $\frac{x^2+4x-12}{x^2-2x-15}$ undefined is

$$\frac{(x+6)(x-2)}{(x-5)(x+3)}$$

D 5

- A -6
- B -2
- C 3

9. The graph of the function $y = \frac{8}{x}$ lies in what quadrant(s)?

- A QI and QIII
- B QII and QIV
- C QII
- D QIII

Answer the following multiple choice questions.

5. Which value of x will make the fraction $\frac{x-3}{x+6}$ undefined?

- A 6
- B -6
- C 3
- D -3