Math 139 Graphing Rational Functions Worksheet

For the following functiona, find:

(a) the *x*-intercepts, y-intercepts
(b) the vertical asymptote(s)
(c) the horizontal asymptote, or oblique if there are any.
(d) holes
(e) any additional points needed
(f) then, graph the function.

1. $f(x) = \dfrac{2x}{x^2 - 1}$

2. $y = \dfrac{8}{x^2 - x - 6}$

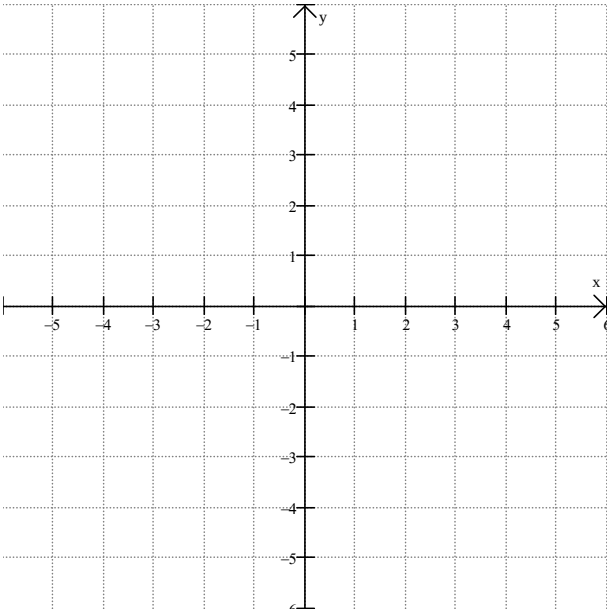
3. $f(x) = \dfrac{x^2 - 9}{2x^2 + 1}$

4. $y = \dfrac{x^2 - 5x + 6}{x^2 - 4x + 3}$

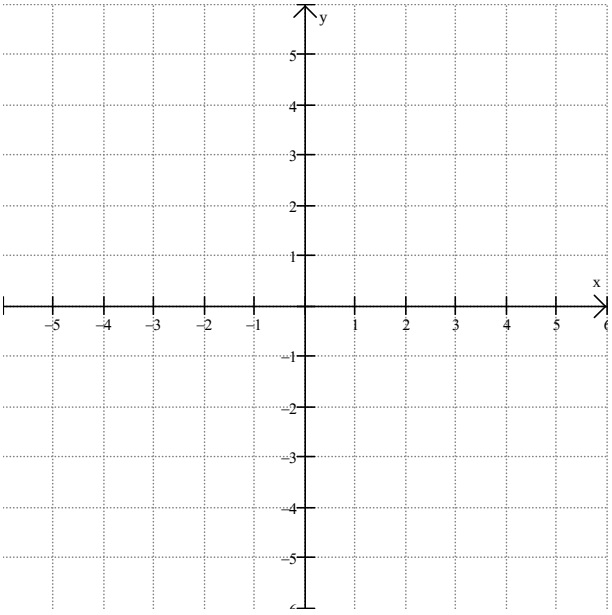
5. $y = \dfrac{x^2 + 11x + 18}{x + 1}$

6. $g(x) = \dfrac{2x^2 - 3x}{x - 2}$

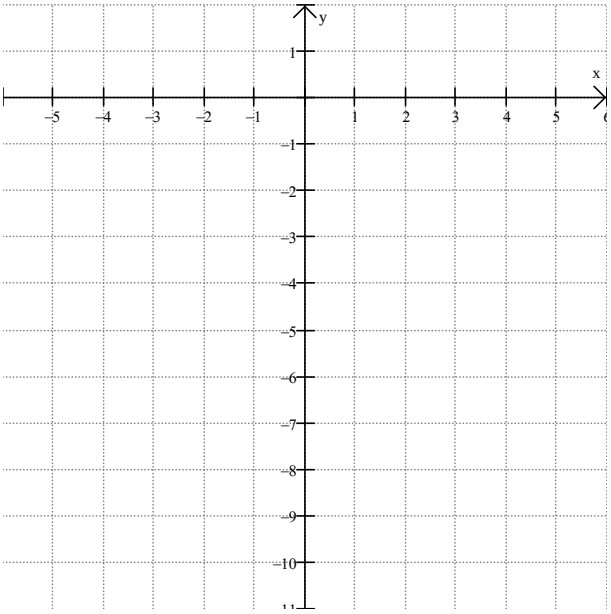
1.



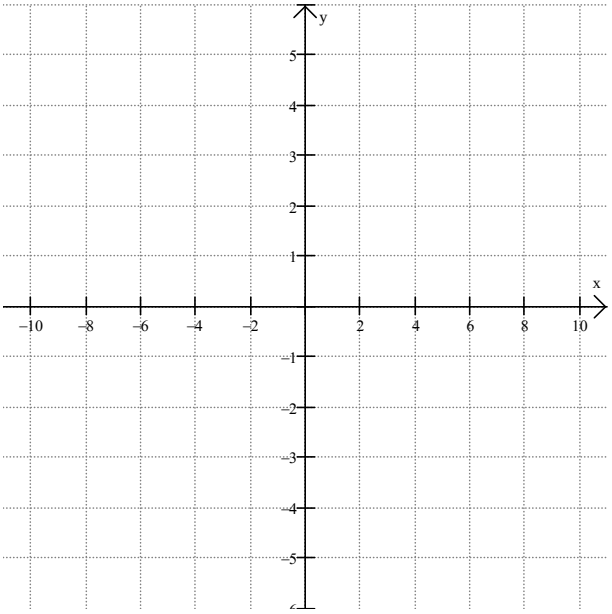
2.



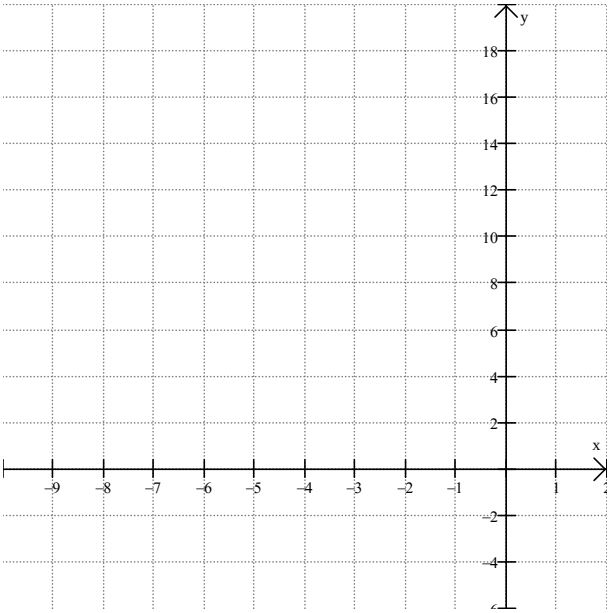
3.


y
x
1
−5 −4 −3 −2 −1 1 2 3 4 5
−1 −2 −3 −4 −5 −6 −7 −8 −9 −10

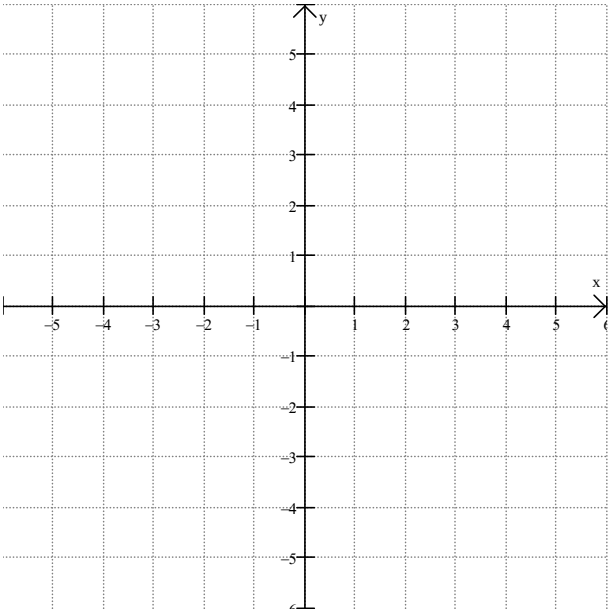
4.


y
x
5
4
3
2
1
−10 −8 −6 −4 −2 2 4 6 8 10
−1 −2 −3 −4 −5

5.


y
x
18
16
14
12
10
8
6
4
2
−9 −8 −7 −6 −5 −4 −3 −2 −1 1
−2 −4

6.


y
x
5
4
3
2
1
−5 −4 −3 −2 −1 1 2 3 4 5
−1 −2 −3 −4 −5