Precalculus **Name** _____
Section 2.6A **Period**_____**Date**_____

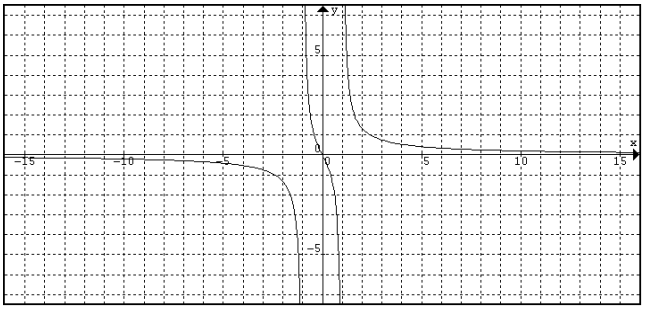
Find the domain, vertical asymptotes, and horizontal asymptotes for the following rational functions.

1. $f(x)=\dfrac{1}{x-5}$ Domain: _____Range:_____ Vertical Asymptote: _____ Horizontal Asymptote: _____	2. $f(x)=\dfrac{3x^3+30}{2x^3}$ Domain: _____Range:_____ Vertical Asymptote: _____ Horizontal Asymptote: _____
3. $f(x)=\dfrac{7x}{2x^2+9x+4}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____	4. $f(x)=\dfrac{2}{x^2-8x}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____
5. $f(x)=\dfrac{6x^2+3}{x-1}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____	6. $f(x)=\dfrac{5x^3-4}{x^2+4x-5}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____
7. $f(x)=\dfrac{3x^2-1}{x^3}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____	8. $f(x)=\dfrac{2x^2+x-9}{3x^2-12}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____

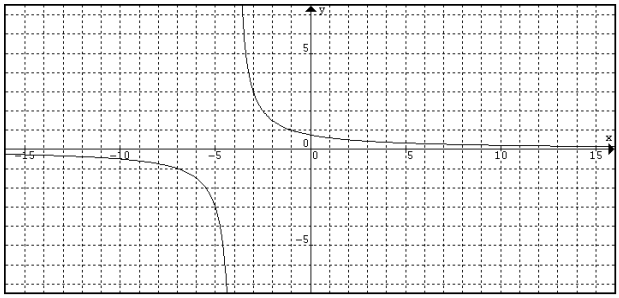
9. $f(x) = \dfrac{12x^4 + 10x - 3}{3x^4}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____	10. $f(x) = \dfrac{13x^4 + x^2}{6x + 3}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____
11. $f(x) = \dfrac{4}{2x^2 - 11x + 5}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____	12. $f(x) = \dfrac{11}{5x^3 - 45x}$ Domain: _____ Vertical Asymptote: _____ Horizontal Asymptote: _____

Find the vertical and horizontal asymptotes for the graphs of the given rational functions.

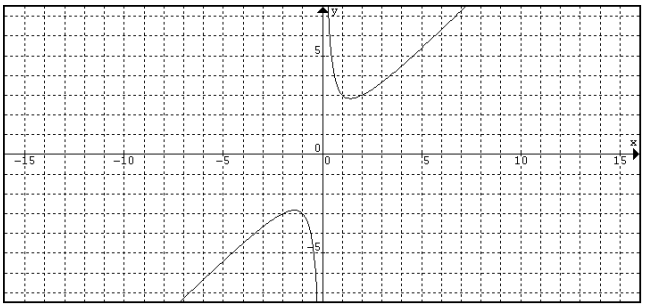
13. HA:_____ VA: _____



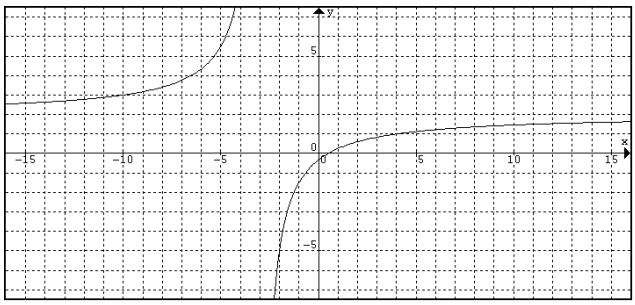
14. HA:_____ VA: _____



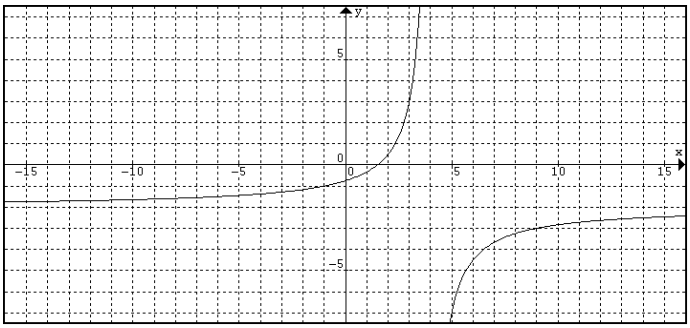
15. HA:_____ VA: _____

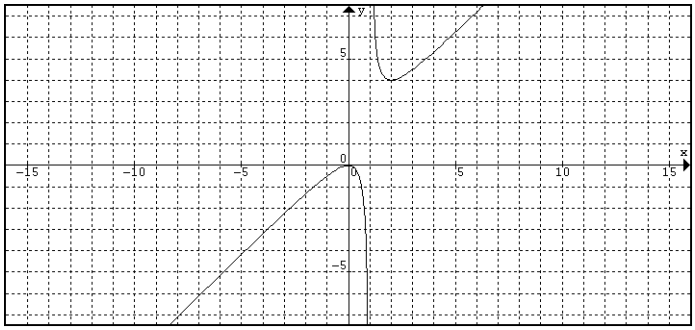


16. HA:_____ VA: _____



17. HA:_____ VA: _____ 18. HA:_____ VA: _____





Analyze the given rational functions and then graph it.

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

a) holes:

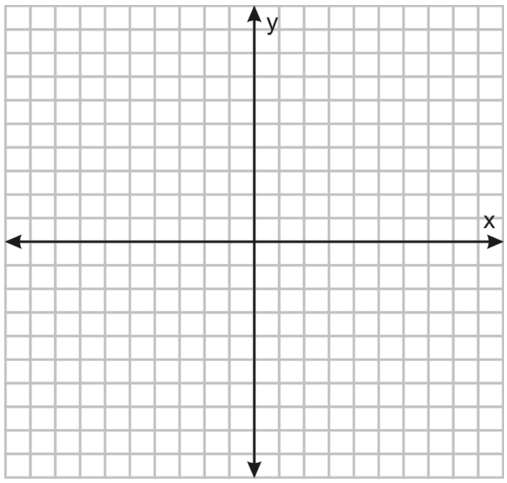
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



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

a) holes:

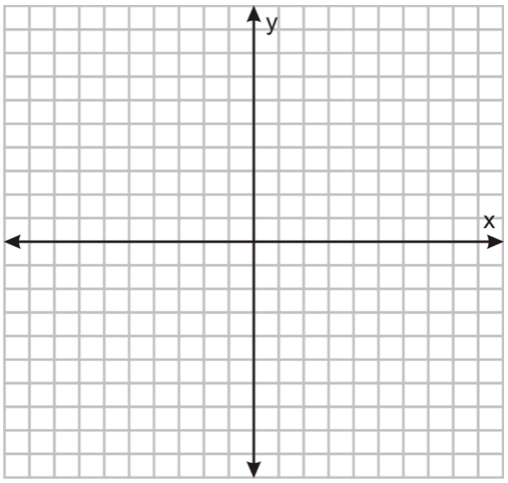
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



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

Holes:

vertical asymptotes:

horizontal asymptotes:

22. $f(x)=\dfrac{2x^2-18}{x^2-16}$

a) holes:

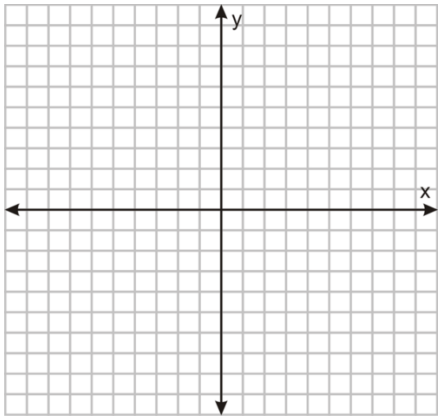
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



23. $f(x)=\dfrac{5x^4}{x^4+1}$

a) holes:

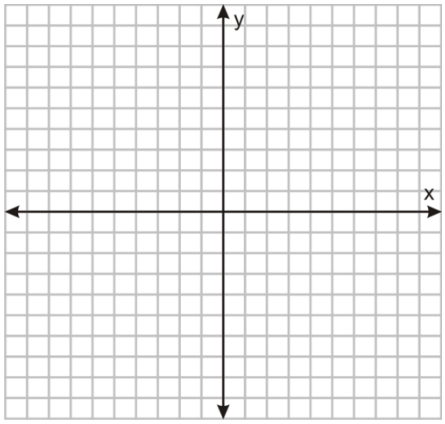
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



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

a) holes:

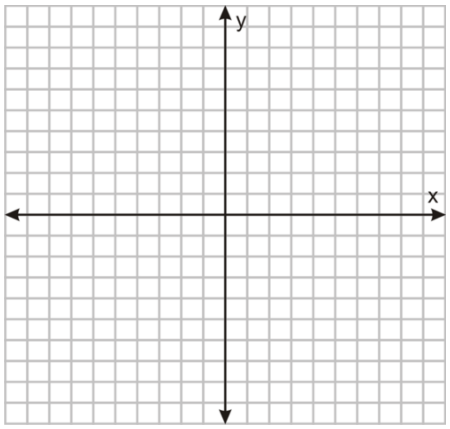
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



25. $f(x)=\dfrac{2x^2+5}{x^2-2x}$

a) holes:

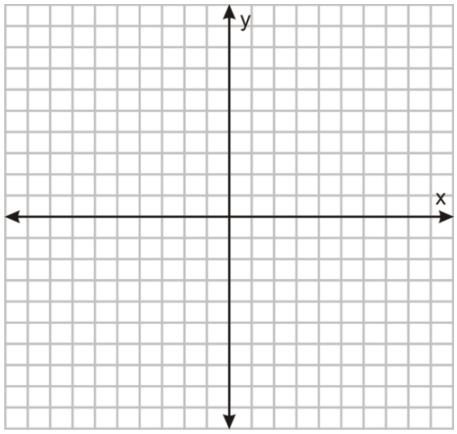
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



26. $f(x) = \frac{3x-3}{x^2-1}$

a) holes:

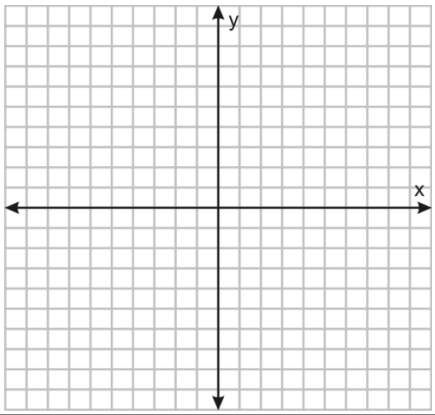
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



27. $f(x) = \frac{x^2}{x^2+1}$

a) holes:

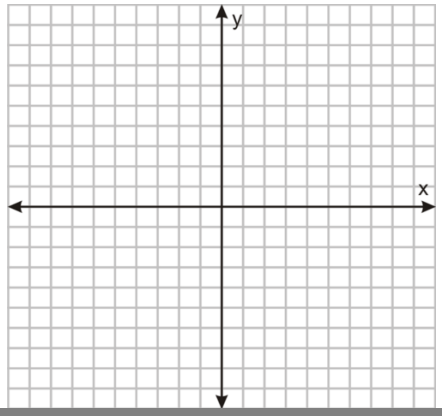
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



28. $f(x) = \frac{6-3x}{x^2-5x+6}$

a) holes:

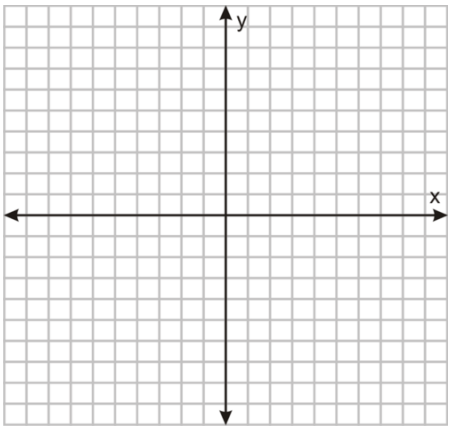
b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes:



29. $f(x) = \frac{x^2-1}{x^4-1}$

a) holes:

b) domain:

c) y-intercept:

d) x-intercept(s):

e) vertical asymptotes:

f) horizontal asymptotes: