Classwork Rational Functions

Please work all problems on a separate sheet of paper.

In exercises 1 – 4, determine the domain of each rational function.

1. $f(x) = \dfrac{2x+5}{3x-1}$

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

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

4. $f(x) = \dfrac{5x+4}{x^2-3x+2}$

In exercises 5 – 8, identify vertical and horizontal asymptotes of each function.

5. $f(x) = \dfrac{5x+1}{x-3}$

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

7. $f(x) = \dfrac{x}{x^2+4}$

8. $f(x) = \dfrac{x^2-2x}{3x^2-x-2}$

In exercises 9 – 13 , graph each rational function and identify, (a) x-intercepts, (b) y-intercept, (c), vertical asymptote, (d) horizontal asymptote, (e) point where we cross H.A.

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

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

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

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

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