3.5 WS 2

Determine the vertical asymptotes of each rational function.

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

2. $F(x)=\dfrac{4x^2+1}{2x^3-3x^2-20x}$

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

4. $H(x)=\dfrac{4x^3+1}{5x^2}$

Determine horizontal asymptotes of each rational function.

5. $P(x)=\dfrac{13x^2-8}{6x^3+2x+1}$

6. $H(x)=\dfrac{3x^3-5x^2-1}{2x^2-3x+11}$

7. $F(x)=\dfrac{8x^2+2x+9}{\frac{2}{3}x^2+15}$

Determine the vertical and horizontal asymptotes of each rational function.

8. $F(x)=\dfrac{x+3}{1-x}$

9. $G(x)=\dfrac{6x^2-5}{2x^2+6}$

10. $F(x)=\dfrac{5x+8}{4x^2+-8x-5}$

11. $P(x)=\dfrac{3x}{2x^2+9}$

Find the slant asymptote of each rational function.

12. $F(x)=\dfrac{4x^2+15x+18}{x-5}$

13. $H(x)=\dfrac{-x^4-2x^3-3x^2+4x-1}{x^3-1}$

14. $P(x)=\dfrac{3-2x-5x^2}{6+x}$

Find all the zeros of the polynomial function and write the polynomial as a product of its leading coefficient and its linear factors.

15. $P(x)=3x^4-17x^3-39x^2+337x+116$

16. $H(x)=2x^4-14x^3+33x^2-46x+40$