1. What is the vertical asymptote of $f(x)=\dfrac{2x}{x-3}$? Verify using limits.

2. What is the horizontal asymptote(s) of $f(x)=\dfrac{6x^3+2x-1}{4x^3+1}$? Verify using limits.

3. $\lim\limits_{x\to\infty}\dfrac{x}{\ln x}$

4. $\lim\limits_{x\to\infty}\dfrac{x}{e^x}$

5. $\lim\limits_{x\to\infty}\dfrac{x^2}{e^x}$

6. $\lim\limits_{x\to\infty}\dfrac{3x^2+4x-1}{x^2+5}$

7. $\lim\limits_{x\to\infty}\dfrac{x+2}{\sqrt{9x^2+1}}$

8. $\lim\limits_{x\to\infty}\sin x$

9. $\lim\limits_{x\to\infty}\dfrac{\sin x}{x}$

10. $\lim\limits_{x\to 2^+}\dfrac{|x-2|}{x-2}$

11. $\lim\limits_{x\to 2^-}\dfrac{|x-2|}{x-2}$

12. $\lim\limits_{x\to 2}\dfrac{|x-2|}{x-2}$

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1. $x = 3$

2. $y = 3/2$

3. infinity

4. 0

5. 0

6. 3

7. 1/3

8. DNE (sin x oscillates so the LIMIT DNE)

9. 0

10. 1

11. -1

12. DNE