Directions: Answer these questions without using your calculator.

$\lim_{x\to 2} \frac{x^2-4}{x^2+4}$ is

(A) 1 (B) 0 (C) $-\frac{1}{2}$ (D) -1 (E) ∞

$\lim_{x\to 2} \frac{4-x^2}{x^2-1}$ is

(A) 1 (B) 0 (C) -4 (D) -1 (E) ∞

$\lim_{x\to 3} \frac{x-3}{x^2+4}$ is

(A) 0 (B) 1 (C) $\frac{1}{4}$ (D) ∞ (E) none of these

$\lim_{x\to 0} \frac{x}{x}$ is

(A) 1 (B) 0 (C) ∞ (D) -1 (E) nonexistent

$\lim_{x\to 2} \frac{x^3-8}{x^2-4}$ is

(A) 4 (B) 0 (C) 1 (D) 3 (E) ∞

$\lim_{x\to \infty} \frac{4-x^2}{4x^2-x-2}$ is

(A) -2 (B) $-\frac{1}{4}$ (C) 1 (D) 2 (E) nonexistent

$\lim_{x\to \infty} \frac{5x^3+27}{20x^2+10x+9}$ is

(A) $-\infty$ (B) -1 (C) 0 (D) 3 (E) ∞

$\lim_{x\to \infty} \frac{3x^2+27}{x^3-27}$ is

(A) 3 (B) ∞ (C) 1 (D) -1 (E) 0

$\lim_{x\to \infty} \frac{2^{-x}}{2^x}$ is

(A) -1 (B) 1 (C) 0 (D) ∞ (E) none of these

~~$\lim x\to\infty 2-x2x$ is~~

~~(A) -1 (B) 1 (C) 0 (D) ∞ (E) none of these~~

14. The graph of $y = \dfrac{x^2-9}{3x-9}$ has

(A) a vertical asymptote at $x = 3$ (B) a horizontal asymptote at $y = \frac{1}{3}$

(C) a removable discontinuity at $x = 3$ (D) an infinite discontinuity at $x = 3$

17. Which statement is true about the curve $y = \dfrac{2x^2+4}{2+7x-4x^2}$?

(A) The line $x = -\frac{1}{4}$ is a vertical asymptote.

(B) The line $x = 1$ is a vertical asymptote.

(C) The line $y = -\frac{1}{4}$ is a horizontal asymptote.

(D) The graph has no vertical or horizontal asymptote.

(E) The line $y = 2$ is a horizontal asymptote.

18. $\lim\limits_{x\to\infty} \dfrac{2x^2+1}{(2-x)(2+x)}$ is

(A) -4 (B) -2 (C) 1 (D) 2 (E) nonexistent

26. The graph of $y = \dfrac{2x^2+2x+3}{4x^3-4x}$ has

(A) a horizontal asymptote at $y = +\frac{1}{2}$ but no vertical asymptote

(B) no horizontal asymptote but two vertical asymptotes, at $x = 0$ and $x = 1$

(C) a horizontal asymptote at $y = \frac{1}{2}$ and two vertical asymptotes, at $x = 0$ and $x = 1$

(D) a horizontal asymptote at $x = 2$ but no vertical asymptote

(E) a horizontal asymptote at $y = \frac{1}{2}$ and two vertical asymptotes, at $x = \pm 1$