1.

a. $12 - 2(-1)^2 - 7(-1)^3 = 12 - 2(1) - 7(-1) = 12 - 2 + 7 = 17$

b. $\frac{2^3-5(2)^6}{3-2} = \frac{8-5(64)}{3-2} = -312$

c. $\frac{x^2-49}{7-x} = \frac{x^2-7^2}{7-x} = \frac{(x-7)(x+7)}{7-x} = x + 7 = 7 + 7 = 14$

d. $\frac{x^2+7x+6}{x^2-3x-4} = \frac{(x+1)(x+6)}{(x+1)(x-4)} = \frac{x+6}{x-4} = \frac{-1+6}{-1-4} = \frac{5}{-5} = -1$

e. $\frac{7x}{x-3} = \frac{7(3^-)}{3^--3} = \frac{21}{0^-} = -\infty$

f. $\frac{-6}{x^2-4} = \frac{-6}{2^{-2}-4} = \frac{-6}{4^--4} = \frac{-6}{0^-} = -\infty$

g. $\frac{x-4}{\sqrt{x}-2}.\frac{\sqrt{x}+2}{\sqrt{x}+2} = \frac{(x-4)(\sqrt{x}+2)}{(x-4)} = \sqrt{x} + 2 = \sqrt{4} + 2 = 2 + 2 = 4$

h. $\frac{3x^3-5x}{x+4x^3} = \frac{x(3x^2-5)}{x(4x^2+1)} = \frac{3x^2-5}{4x^2+1} = \frac{3(0)^2-5}{4(0)^2+1} = -5$

2.

a. $2x - 2 = 2(2^-) - 2 = 4^- - 2 = 2^-$

b. $x^2 - 3x = 2^{+2} - 3(2^+) = 4^+ - 6^+ = -2^+$

c. $x^2 - 3x = 2^2 - 3(2) = 4 - 6 = -2$

3.

a. $\frac{587}{2+x^2} = \frac{587}{2+(-\infty)^2} = \frac{587}{\infty} = 0$

b. $\frac{5x-4}{3x+1} = \frac{x(5-\frac{4}{x})}{x(3+\frac{1}{x})} = \frac{5-\frac{4}{x}}{3+\frac{1}{x}} = \frac{5-\frac{4}{\infty}}{3+\frac{1}{\infty}} = \frac{5-0}{3+0} = \frac{5}{3}$

c. $\frac{2x^2-5x^3}{100+x^2} = \frac{x^2(2-5x)}{x^2(\frac{100}{x^2}+1)} = \frac{2-5x}{\frac{100}{x^2}+1} = \frac{2-5(-\infty)}{\frac{100}{(-\infty)^2}+1} = \frac{2+\infty}{0+1} = +\infty$

d. $\frac{27x^2-2}{10x+1-x^2} = \frac{x^2(27-\frac{2}{x^2})}{x^2(\frac{10}{x}+\frac{1}{x^2}-1)} = \frac{27-\frac{2}{x^2}}{\frac{10}{x}+\frac{1}{x^2}-1} = \frac{27-\frac{2}{\infty^2}}{\frac{10}{\infty}+\frac{1}{\infty^2}-1} = \frac{27-0}{0+0-1} = -27$

4.

a. $\frac{3x}{x-1} = \frac{3(-\infty)}{-\infty-1} = \frac{3(-\infty)}{(-\infty)} = 3$

b. $\frac{3x}{x-1} = \frac{3(+\infty)}{+\infty-1} = \frac{3(+\infty)}{(+\infty)} = 3$

c. $\frac{3x}{x-1} = \frac{3(1^-)}{(1^-)-1} = \frac{3^-}{0^-} = -\infty$

d. $\frac{3x}{x-1} = \frac{3(1^+)}{(1^+)-1} = \frac{3^+}{0^+} = +\infty$

e. $\frac{3x}{x-1} = \frac{3(1)}{(1)-1} = ?\ (Indeterminação)$