① a) $\Delta = 1^2 - 4.1.(-6)$ $\quad x = \frac{-1 \pm \sqrt{25}}{2.1}$ $\quad \frac{(x-2)(x+3)}{x-2}$

$\Delta = 1 + 24$

$\Delta = 25$ $\quad x = \frac{-1 \pm 5}{2}$ $\quad x_1 = 2$, $x_2 = -3$ $\quad x + 3 = 2 + 3 = 5$

$\lim_{x \to 2} \frac{x^2 + x - 6}{x - 2} = 5$

b) $\Delta = (-4)^2 - 4.1.(-5)$ $\quad x = \frac{4 \pm 6}{2}$ $\quad \frac{x-5}{(x-5)(x+1)} =$

$\Delta = 16 + 20 = 36$ $\quad x_1 = 5$ $\quad \frac{1}{x+1} =$

$x_2 = -1$ $\quad \frac{1}{5+1} = \frac{1}{6}$

$\lim_{x \to 5} \frac{x-5}{x^2 - 4x - 5} = \frac{1}{6}$

c) $\Delta = 9 - 4.1.2$ $\quad x = \frac{-3 \pm 1}{2}$ $\quad \frac{x+2}{(x+1)(x+2)} =$

$\Delta = 1$ $\quad x_1 = -1$ $\quad \frac{1}{x+1} =$

$x_2 = -2$ $\quad \frac{1}{-2+1} = -1$

$\lim_{x \to -2} \frac{x+2}{x^2 + 3x + 2} = -1$

d) $\Delta = (-7)^2 - 4.3.2$ $\quad x = \frac{7 \pm 5}{2.3}$ $\quad \frac{3.(x-2)(x-\frac{1}{3})}{x-2} =$

$\Delta = 49 - 24 = 25$ $\quad x_1 = 2$ $\quad 3(x - \frac{1}{3}) =$

$x_2 = \frac{1}{3}$ $\quad 3(2 - \frac{1}{3}) =$

$3 . \frac{5}{3} = 5$

$\lim_{x \to 2} \frac{3x^2 - 7x + 2}{x - 2} = 5$

e) $\Delta = 5^2 - 4.1.4$ $\quad x = \frac{-5 \pm 3}{2}$ $\quad (x+1)(x+4)$

$\Delta = 25 - 16 = 9$ $\quad x_1 = -1$ $\quad \frac{(x+1)(x+4)}{(x-1)(x+4)} =$

$x_2 = -4$

$\Delta = 3^2 - 4.1.(-4$ $\quad x = \frac{-3 \pm 5}{2}$ $\quad (x-1)(x+4)$

$\Delta = 9 + 16 = 25$ $\quad x_1 = 1$ $\quad \frac{x+1}{x-1} =$

$x_2 = -4$ $\quad \frac{-4+1}{-4-1} =$

$\frac{-3}{-5} = \frac{3}{5}$

$\lim_{x \to -4} \frac{x^2 + 5x + 4}{x^2 + 3x - 4} = \frac{3}{5}$

f) $\frac{(x+4)(x+4) - 16}{x} =$ $\quad \frac{x(x+8)}{x} =$

$\frac{x^2 + 4x + 4x + 16 - 16}{x} =$ $\quad x + 8 =$

$\frac{x^2 + 8x}{x} =$ $\quad 0 + 8 = 8$

$\lim_{x \to 0} \frac{(x+4)^2 - 16}{x} = 8$

g) $\Delta = 1 - 4.1.6$

$\Delta = 1 - 24$

$\Delta = -23$ NÃO TEM RAÍZES REAIS

h) $\Delta = (-3)^2 - 4.1.(-4)$ $\quad x = \frac{3 \pm 5}{2}$ $\quad \frac{x^2 - 4x}{(x-4)(x+1)} =$

$\Delta = 9 + 16 = 25$ $\quad x_1 = 4$

$x_2 = -1$ $\quad \frac{x(x-4)}{(x-4)(x+1)} =$

$\frac{x}{x+1} =$

$\frac{4}{4+1} = \frac{4}{5}$

$\lim_{x \to 4} \frac{x^2 - 4x}{x^2 - 3x - 4} = \frac{4}{5}$