

6. (a) $\int \frac{1}{1-x^2} dx = \frac{-\ln(-1+x)}{2} + \frac{\ln(1+x)}{2}$
- (b) $\int \frac{5+x}{x+x^2} dx = 5 \ln(x) - 4 \ln(1+x)$
- (c) $\int \frac{1}{-4+x^2} dx = \frac{\ln(-2+x)}{4} - \frac{\ln(2+x)}{4}$
- (d) $\int \frac{-8+5x}{-8-2x+x^2} dx = 2 \ln(-4+x) + 3 \ln(2+x)$
- (e) $\int \frac{-20-25x+7x^2}{-4x+x^2} dx = 7x - 2 \ln(-4+x) + 5 \ln(x)$
- (f) $\int \frac{-11+2x^2}{-12-x+x^2} dx = 2x + 3 \ln(-4+x) - \ln(3+x)$
- (g) $\int \frac{22-7x-8x^2+3x^3}{-6-x+x^2} dx = -5x + \frac{3x^2}{2} + 2 \ln(-3+x) + 4 \ln(2+x)$
- (h) $\int \frac{7-10x-7x^2+16x^3+12x^4}{-6+5x+6x^2} dx = \frac{x^2}{2} + \frac{2x^3}{3} - \ln(3+2x) + \frac{\ln(-2+3x)}{3}$
- (i) $\int \frac{-1-4x+2x^2}{-x+x^3} dx = \frac{-3 \ln(-1+x)}{2} + \ln(x) + \frac{5 \ln(1+x)}{2}$
- (j) $\int \frac{-8+3x^2}{-4x+x^3} dx = 2 \ln(x) + \frac{\ln(-4+x^2)}{2}$
- (k) $\int \frac{1+5x}{-2-x+2x^2+x^3} dx = \ln(-1+x) + 2 \ln(1+x) - 3 \ln(2+x)$
- (l) $\int \frac{-8+3x}{3-x-3x^2+x^3} dx = \frac{\ln(-3+x)}{8} + \frac{5 \ln(-1+x)}{4} - \frac{11 \ln(1+x)}{8}$
- (m) $\int \frac{3+15x}{-70-39x+x^3} dx = -2 \ln(5+x) + \ln(-14-5x+x^2)$
- (n) $\int \frac{-6+22x+21x^2+4x^3}{6x+5x^2+x^3} dx = 4x - \ln(x) - \ln(2+x) + 3 \ln(3+x)$
- (o) $\int \frac{-1+3x-5x^2-2x^3+5x^4}{12-4x-3x^2+x^3} dx = 13x + \frac{5x^2}{2} + \frac{314 \ln(-3+x)}{5} - \frac{49 \ln(-2+x)}{4} + \frac{69 \ln(2+x)}{20}$
- (p) $\int \frac{x}{1-2x+x^2} dx = -\frac{1}{1+x} + \ln(-1+x)$
- (q) $\int \frac{4+9x+4x^2}{4x+4x^2+x^3} dx = \frac{1}{2+x} + \ln(x) + 3 \ln(2+x)$
- (r) $\int \frac{-8+x}{-16-12x+x^3} dx = \frac{-5}{3(2+x)} - \frac{\ln(-4+x)}{9} + \frac{\ln(2+x)}{9}$
- (s) $\int -\frac{x}{1+2x+x^2} dx = -\frac{1}{1+x} - \ln(1+x)$
- (t) $\int \frac{3-8x+3x^2}{9x-6x^2+x^3} dx = \frac{-2}{-3+x} + \frac{8 \ln(-3+x)}{3} + \frac{\ln(x)}{3}$
- (u) $\int \frac{-6+x}{32-6x^2+x^3} dx = \frac{1}{3(-4+x)} + \frac{2 \ln(-4+x)}{9} - \frac{2 \ln(2+x)}{9}$
- (v) $\int \frac{28-9x+x^2}{20-16x+x^2+x^3} dx = \frac{-2}{-2+x} - \ln(-2+x) + 2 \ln(5+x)$
- (w) $\int \frac{43+74x-27x^2-5x^3+2x^4}{36-15x-2x^2+x^3} dx = \frac{-7}{-3+x} - x + x^2 - 2 \ln(-3+x) + 3 \ln(4+x)$
- (x) $\int \frac{1}{5+4x+x^2} dx = \arctan(2+x)$
- (y) $\int \frac{1}{13+4x+x^2} dx = \frac{\arctan(\frac{2+x}{3})}{3}$
- (z) $\int \frac{1}{40+8x+2x^2} dx = \frac{\arctan(\frac{2+x}{4})}{8}$
- (z1) $\int \frac{3}{136+24x+4x^2} dx = \frac{3 \arctan(\frac{3+x}{5})}{20}$
- (z2) $\int \frac{2}{4+2x^2} dx = \frac{\arctan(\frac{x}{\sqrt{2}})}{\sqrt{2}}$