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Dept;MBBS

Matrix no; 19/MHS01/100

$$1) \int 11-3x/x^2+2x-3 dx$$

$$\int 11dx - \int 3x/x^2+2x-3 dx$$

$$11x- \int 3x/x^2+2x-3 dx$$

$$11x-9/4\ln(|x+3|) -3/4\ln(\ln|x-1|)$$

$$11x-9/4\ln(|x+3|)-3/4\ln(|x-1|)+c$$

$$2) \int 4x dx - \int 16/x^2-2x-3 dx$$

$$2x^2 \int 16/x^2-2x-3 dx$$

$$2x^2+4\ln(|x+1|)-4\ln(|x-3|)$$

$$2x^2+4\ln(|x+1|)-4\ln(|x-3|)+c$$

$$3) \int A1/x+1 +A2/x+2 +A3/x+3 dx$$

$$\int -12/x+1 +9/x+2 +5/x+3 dx$$

$$\int -12/x+1 dx + \int 9/x+2 dx + \int 5/x+3 dx$$

$$-(12 \int 1/x+1 dx) + \int 9/x+2 dx + \int 5/x+3 dx$$

$$-12 \int 1/x+1 dx + \int 9/x+2 dx + \int 5/x+3 dx$$

$$\text{Let } u_1=x+1$$

$$-12 \int 1/u_1 du_1 + \int 9/x+2 dx + \int 5/x+3 dx$$

$$-12 (\ln(|u_1|) + c) + \int 9/x+2 dx + \int 5/x+3 dx$$

$$\text{Let } U_2 = x+2$$

$$-12 (\ln(|u_1|)+c) + 9 \int 1/U_2 du_2 + \int 5/x+3 dx$$

$$-12(\ln(|u_1|)+c) + 9(\ln(|U_2|)+c) + \int 5/x+3 dx$$

$$\text{Let } U_3=x+3$$

$$-12(\ln(|u_1|)+c) + 9(\ln(|U_2|)+c) + 5 \int (\ln(|u_3|)+c)$$

$$-12 \ln(|u_1|) + 9 \ln(|u_2|) + 5 \ln(|u_3|) + c$$