1. S11-3X/X^2+2X-3)dx

#### Soln :

S11-3x/x^2 +2x-3=11-3x/(x-1)(x+3) = A/x-1 + B/x+3 =A(X+3)/X-1 + B(X-1)/X+3

X-1=0 , X=1 . A(1+3) = 11-3(1) = 4A =8 , A=2

X+3 =0 , X=-3 . B(-3-1)=11-3(-3) =B(-4)=20,B=-5

S2/(X-1)dx + -5/(X+3)dx = S11-3X/X^2 + 2X -3)dx

Let U=(X-1), du=dx , dx=du

S2du/u dx =2In(x-1) , S-5du/u dx =-5In(x+3)

ANS =2Inu = -5Inu

 2. S4X-16/X^2 -2X-3)dx = S4X-16/(X+1)(X-3)=A/(X+1) + B/(X-3)

= A(X-3)/(X+1) + B(X+1)/(X-3). X+1=0 , X=-1 . A(-1-3)=4X-16 , A(-4)= -4-16 , A=5 .

=B= X-3 =0 , X=3 . B(3+1) = 4(3)-16 , B(4)=-4 , B=-1

S5dx/(X+1) + S-dx/(x-3) , let U =X+1,du=dx , du=dx =S5du/u =5In(X+1)

S-du/u let u=x-3 , du=dx , dx=du = -1In (x-3) ANS= 5Inu = -1Inu

1. S2x^2 -9x-35/(x+1)(x+2)(x+3) = A/(X+1) + B/(X+2) + C/(X+3)

2X^2 -9X-35/(X+1)(X+2)(X+3) = A(X+3) + B(X+1)(X+2) +C(X+1)/(X+1)(X+2)(X+3)

2X^2 – 9X -35 =AX+3A+BX^2+3BX+2B+CX+C

2X^2 -9X-35=X(A+3B+C) +X^2 (B) + (3A+2B+C)

B=2…….(1) , A+3B+C=-9……(2) ,3A+2B+C =-35………(3)

A+3B+C=-9 recall B=2 , A+3(2)+C=-9 , A+C=-9-6 = A+C=-15 , A=-15-C

Substitute A in equ (3) . 3(-15-C)+2B+C=-35

3(-15-C)+4+C=-35 , 3(-15-C)+C=-39 , -45-3C+C = -39=-3C+C=-39+45

-3C+C =6, -2C=6 , C=-3. A+(-3)=-15, A-3=-15 = A=-12

S2X^2 -9X-35/(X+1)(X+2)(X+3) = S-12/ (X+1)dx + S2/(X+2)dx + S-3/(X+3)dx

= -12In(X+1) + 2In(x+2)-3In(X+3) + C

Multiply by -1

ANS=12In(X+1) -2In(X+2) + 3In(X+3) + C

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