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OTHER NAMES: Wisdom Partners

MATRIC NO: 18/MHS01/100

COLLEGE: MHS DEPT: MBBS LEVEL: 100

COURSE: MAT 104

**1. ʃ11-3x/(x2+2x-3) dx**

By partial fraction, we have:

11-3x/(x2+2x-3) = A/(x+3) + B/(x-1)

11-3x/(x2+2x-3) = (A/(x-1) + B/(x+3))/(x+3)(x-1)

11-3x = A(x-1) + B(x+3)

At x = 1

11-3(1) = A(1-1) + B(1+3)

11-3 = 0 + 4B

8 = 4

B = 8/4

B = 2

At x = -3

11-3(-3) = A(-3-1) + B(-3+3)

11+9 = -4A + 0

20 = -4A

A = 20/-4

A = -5

11-3x/(x2+2x-3) = -5/(x+3) + 2/(x-1)

ʃ11-3x/(x2+2x-3) dx = - ʃ5/(x+3) dx + ʃ2/(x-1) dx

= -5ʃ1/x+3 dx + 2ʃ1/x-1 dx

**= -5ln(x+3) + 2ln(x-1) + c**

**2. ʃ4x-16/(x2-2x-3) dx**

By partial fraction, we have:

4x-16/(x2-2x-3) = A/(x-3) + B/(x+1)

4x-16/(x2-2x-3) = (A(x+1) + B(x-3))/(x-3)(x+1)

4x-16 = A(x+1) + B(x-3)

At x=-1

4(-1)-16 = A(-1+1) + B(-1-3)

-4-16 = 0-4B

-20 = -4B

B = -20/-4

B = 5

At x=3

4(3)-16 = A(3+1) + B(3-3)

12-16 = 4A + 0

-4 = 4A

A =-4/4

A = -1

4x-16/(x2-2x-3) = -1/(x-3) + 5/(x+1)

= -ʃ1/(x-3)dx + ʃ5/(x+1)

= -ʃ1/(x-3) dx + 5ʃ1/(x+1)

**= -ln(x-3) + 5ln(x+1) + c**

**3. ʃ(2x2-9x-35)/(x+1)(x-2)(x+3) dx**

By partial fraction, we have:

(2x2-9x-35)/(x+1)(x-2)(x+3) = A/(x+1) + B/(x-2) + C/(x+3)

(2x2-9x-35)/(x+1)(x-2)(x+3) = (A(x2+x-6) + B(x2+4x+3) + C(x2-x-2))/(x+1)(x-2)(x+3)

2x2-9x-35 = A(x2+x-6) + B(x2+4x+3) + C(x2-x-2)

At x = -3

2(-3)2-9(-3)-35 = A(-32-3-6) + B(-32-12+3) + C(-32+3-2)

18+27-35 = 0 + 0 + 10C

10 = 10C

C = 10/10

C = 1

At x = 2

2(2)2-9(2)-35 = A(22+2-6) + B(22+4(2)+3) + C(22-2-2)

8-18-35 = 0 + 15B + 0

-45 =15B

B = -45/15

B = -3

At x = -1

2(-1)2-9(-1)-35 = A(-12-1-6) + B(-12-4+3) + C(-12+1-2)

2+9-35 = -6A + 0 + 0

-24 = -6A

A = -24/-6

A = 4

(2x2-9x-35)/(x+1)(x-2)(x+3) = 4/(x+1) – 3/(x-2) + 1/(x+3)

ʃ(2x2-9x-35)/(x+1)(x-2)(x+3) = ʃ4/(x+1) – 3/(x-2) + 1/(x+3)

= ʃ4/(x+1) - ʃ3/(x-2) + ʃ1/(x+3)

= 4ʃ1/(x+1) -3ʃ1/(x-2) + ʃ1/(x+3)

**= 4ln(x+1) – 3ln(x-2) + ln(x+3) + C**