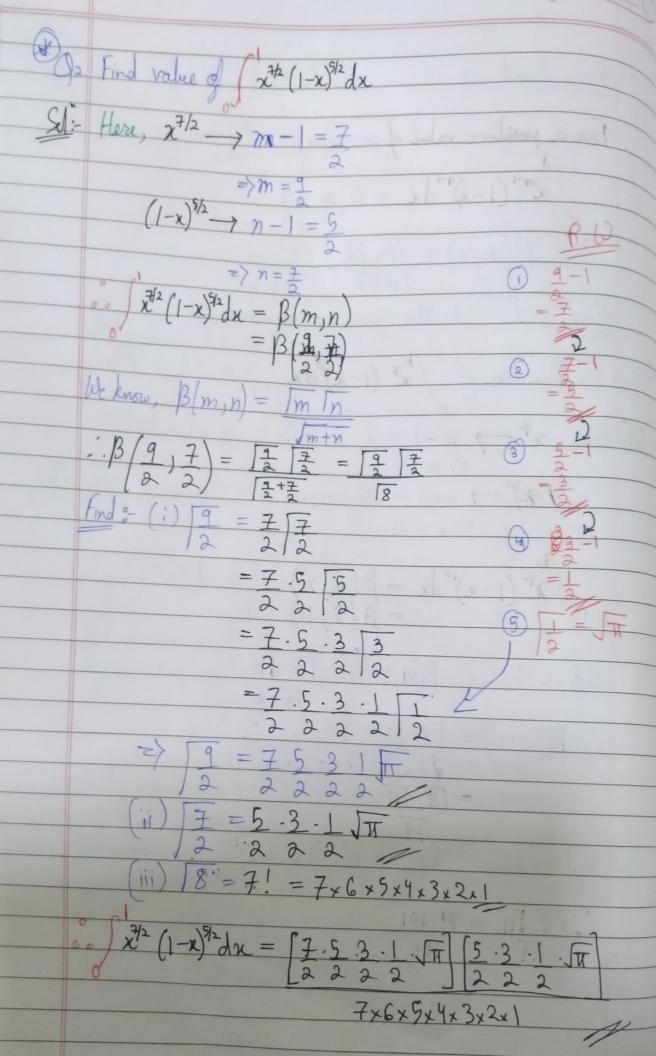
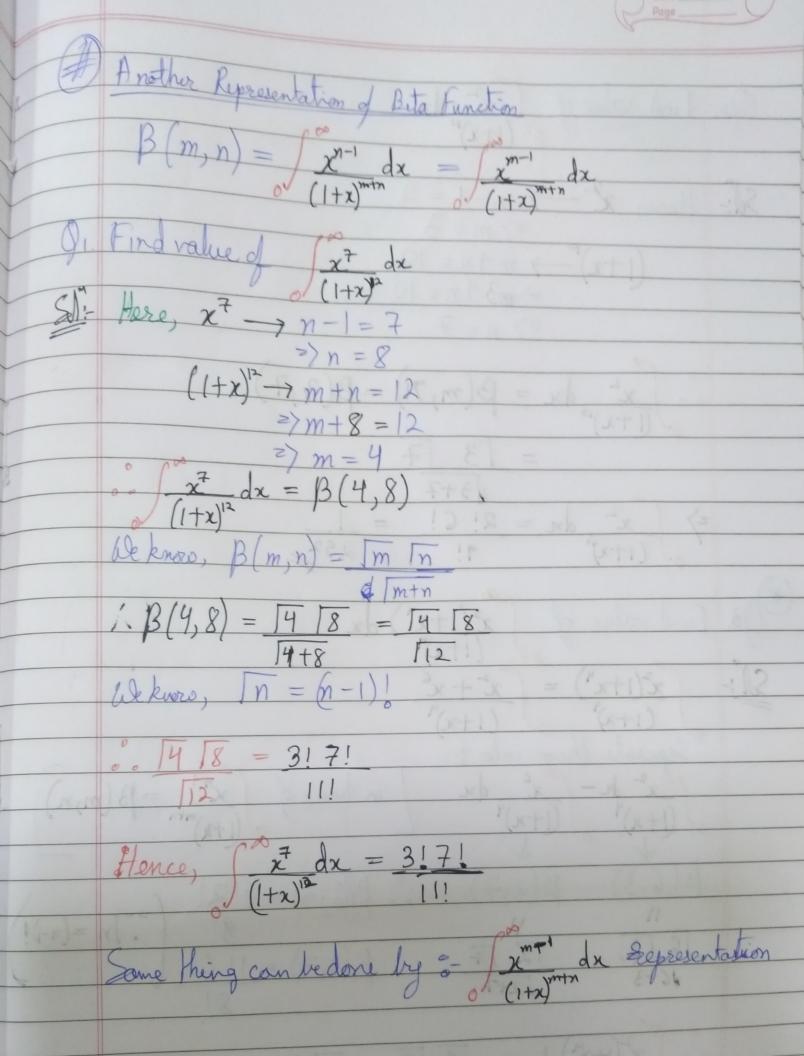
For a positive value of mand n, $\int_{\infty}^{\infty} x^{m-1} (1-x)^{m-1} dx = \beta(m,n)$ there $\beta(m,n) = Im In$ Im+n

Here, I is the gamma symbol gr. Find value of /x7 (1-x)10dx Sel: Here, 27 -> m-1=7 $2^{\frac{1}{2}(1-x)^{10}}dx = \beta(m,n)$ $= \beta(8,11)$ But, we know, B(m, n) = Im In ° B(8,11) = 18 11 $\frac{119}{n} = (n-1)$ · [8] = 7! 101 [19] [8!





Qa. Find value of of x2 dx Sol: Here, 2-17 m-1 = 2 " (1) $(+x)^{10}$ = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 = 7 m = 3 $\frac{\chi^2}{(1+\chi)^{10}}d\chi = \beta(m,n) = \beta(3,7)$ $= \sqrt{\frac{3}{3+7}}$ $= \sqrt{\frac{3+7}{2}}$ $\sqrt{\frac{2}{(1+x)^6}} dn = 2! 6! = 1$ 9! 252Find value of $x^2(1+x^4)$ dx $(1+x)^9$ $(1+x)^9$ $(1+x)^9$ Separate them into x^2 $(1+x)^9$ $(1+x)^9$ $\beta(6,3)$ $\beta(2,7)$ $\beta(6,3) = 5!2!$ $\beta(2,7) = 1!6!$