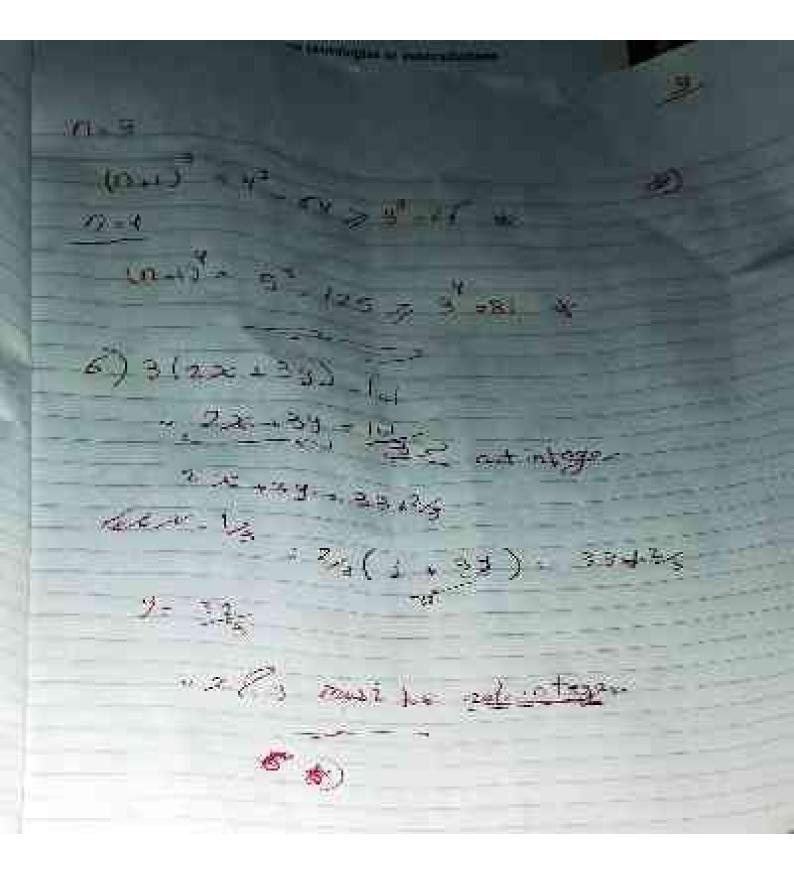
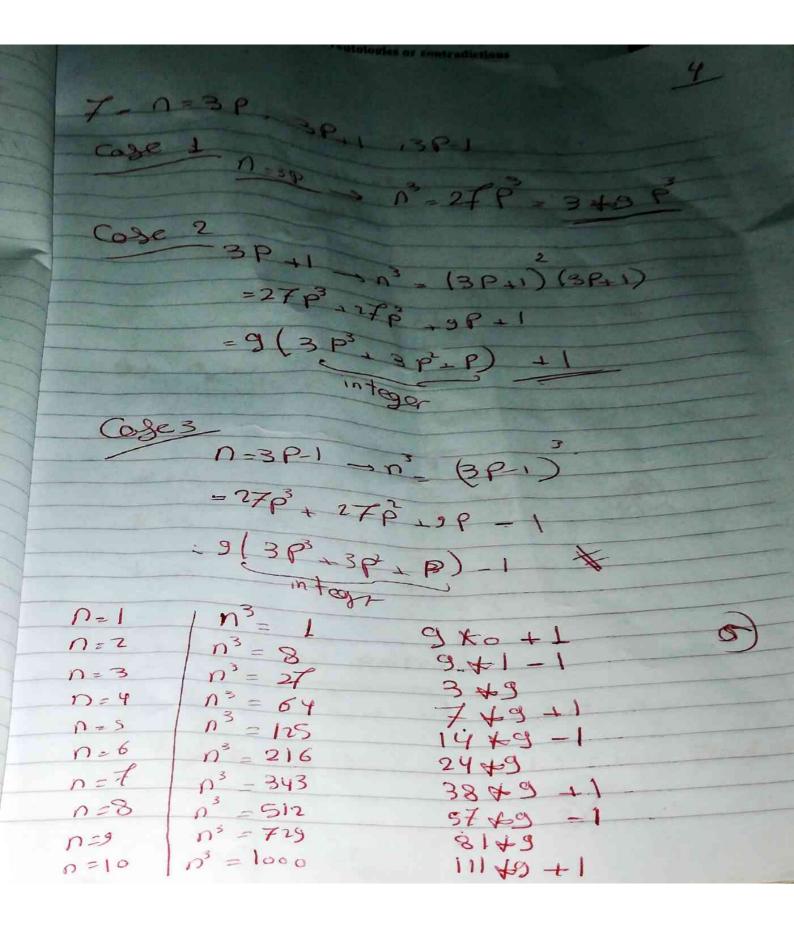


3) let m en ere odd integers m = 2k + 1 $n = 2\ell + 1$: mn = 12k+1)(2l+1) = 4kl +2k+2l+1 = 2(2kl + k+l) +1 Do odd 4) Proof by existance: Cet 12= 22 r + 185 Sinteger -2k = 2 (22+ +185) by distribution law 2K=44r+365 5) n=1 $(n+1)^3 = 2^3 = 8 > 3$ n=2 $(n+1)^3 = 3^3 = 27 \times 3^2 \times 10^3$





8) For Contradiction, there exist a & b 31 7a+lob) =1 must be 1/3 30 a or be must be rational * Contradiction 9) ak = 10-k k=1 $a_1 = \frac{1}{9}$ k=2 $a_2 = \frac{1}{8} = \frac{1}{4}$ K=1 $\mu = 3$ $q = \frac{3}{7}$ $\mu = 4$ $q = \frac{4}{6} = \frac{2}{3}$ 10) a) Basic Property I(n): i = n and product = n x before 1st iteration I(0) = i=0, Product 20. X 2)

b) inductive Property before iteration i + m (G Passed) Product old Kx, I old = K after iteration Product = Product +>c = Kx+x =>c(K+1) new = 'old +1 = K+1 c) eventual Salsity of Guard guard Condition Gifm. ofter m iteration l=m ~ G false d) Correctness of the post Condition 2 ofter last iteration G false i=m JIN) true i=N, product=N.X i m= N Product= m x