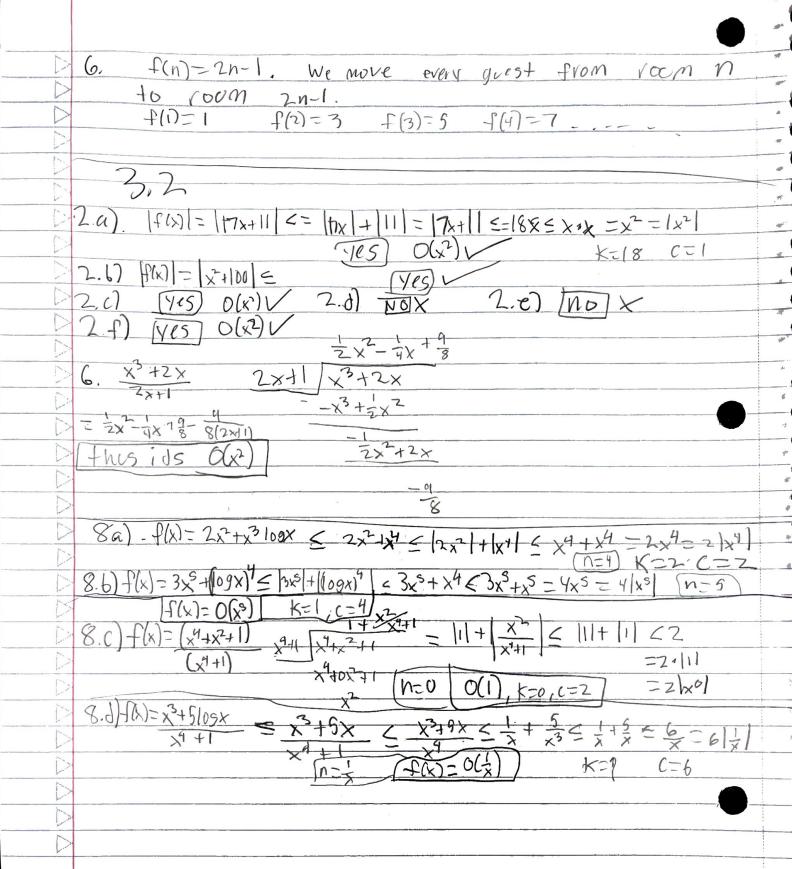
70 0 Discrete Hw #6 30,a) 5 = H3-15+7 = 16 30.c) $\sum 7 = \frac{1}{1+\frac{1}{3}} + \frac{1}{5} + \frac{1}{7} = \frac{176}{109}$ 32.6) $\sum_{3=0}^{8} (3^{3}-2^{3}) = 0+1+5+(19)+(81-16)+(23^{3}-32)+(36-64)+$ $32.c) \sum_{3=0}^{8} (3^{7}-128)+(3^{9}-256)=9330$ $\frac{23^{2}-2}{3-1}+\frac{3\cdot 2^{4}-3}{1}$ C - 19682 + 1533 - 2/2/5 1 $\sum_{i=1}^{2} \sum_{j=1}^{3} (2i+3j) = \sum_{j=1}^{2} ((2i+0)+(2i+3)+(2i+6)+(2i+9))$ 34.6 1 ____ = ((0+0)+(0+3)+(0+6)+(0+9))+((2+0)+(2+3)+(2+6)+(2+9))+(4+6)+(4+3)+(4+3)+(4+6)+(4+9) = (8+26+34=78)1 4.a) Countable The forack $f(n) = 3(\frac{n}{4} - 1) + 1$ by 3.

4.b) Countably infinite f(n) = 5n, $1 \le n \le 6$ for Positive

-5(n-6), $7 \le n \le 12$ for negative A 4. C (Coundable infinite) because it has so elections any 1-1 COTVESPONENCY 11+100 = 11,11.1,1111--- (4.d) [uncountable 15





(4,a) g(x)= x3, 1x3/2 (1x2) = (Cx7) Contradiction because 1x31 7 lox21 when x 7C, 1V0+ O(x3) (A.b) 900 3 500=3 15W= 1,31= 19(x) 785 9(x) is o(x3) [4.c) $g(x) = x^2 + (3)$ Yes $\sqrt{x^4 - 3}$ [4.d) $g(x) = x^2 + x^4$ Yes $\sqrt{x^4 - 3}$ [1.e) $g(x) = x^2 + x^4$ Yes $\sqrt{x^4 - 3}$ [1.e) $g(x) = x^2 + x^4$ Yes $\sqrt{x^4 - 3}$ - f(x)=x3 is D(3*) with K=3, C-1 Yes (4,1) (x3=x2=2(3)-2(x3)-2(gex) C=2 YES - (X) is D(x3) K=0 CS2 22. (logn) < Un logn < n994 n98 < n00 < 1.5 < 10 1 < 1012 30,a) f(x)=3x+7 g(x)=x let k=7 x77 |f(x)|= |3x+7| < 3x+x = 4x = 4|x| C=4 O(x), K=7, C=4 f(x)=32+7 let k=0 x70 =3x+773x=3|x| f(x) 0k/, K=0, C=3

til street