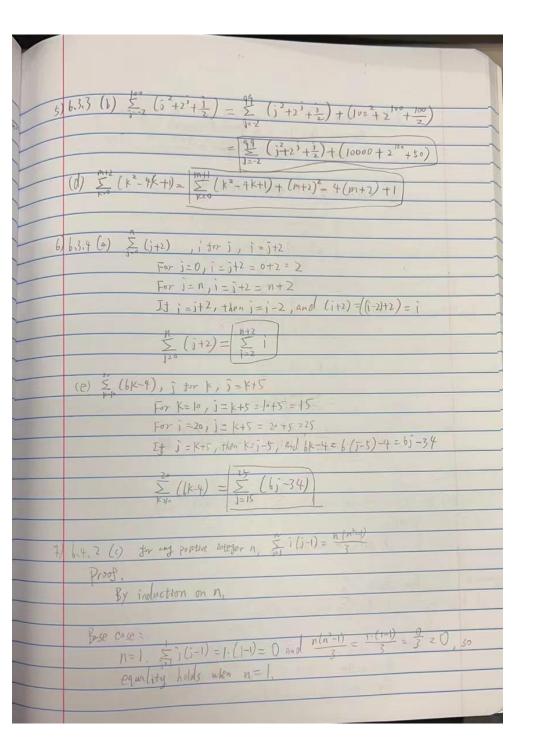
HW 4 1) 61.1 (h) The nth term & 2 Thos n 7

2 Thos 17, 2 Thos 27, 2 Tho Won - decreasing Not increasing, decreasing, or non-increasing 2) b.1.4 (b) {a, ar, ar, ar, ar, ar, ...} (xn) xn zarn+ ₩ = W = {1, 2, 3...} if Xn+1 < Xn if a = 0, { This is iero sequence, Xnt1 /1 r 41 : |a +0, and r <1 3) 6-2,1 (e) b, =1, b=23, and bn=bn-1-7-bn-2 for n 23 h=1, b2 =3, b3 = b2-7.b1 = -4, b4= b3-7.b2 = -4-21=-25, b5 = b4 - 1.b3 = -25 +28 = 3, b6 = b5 - 7.b4 = 3+175 = 178, 11,3,-4,-25,3,178 4) $1.3.1(4) \sum_{y=3}^{2} k^{3} = (3)^{3} + (2)^{3} + (1)^{3} + 0^{3} + 1^{3} + 2^{3}$ = (27)+(8)+(1)+0+1+8 (g) = 3+5k = 3+ = 3+ = 3 + = 3(101) + 5.100.101 = 303 + 25250 = 25553 (h) \$ 3.(1,0 = 3 (1,1 10 -1) = 30 (1,1 10 -1) \$ 45 4730, 2072



70	The second secon
	Inductive step? Assume that $K \to A$ positive integer and $K \to A$ $K $
	$\frac{ K+1 }{ S } (S-1) = \sum_{j=1}^{K} (S-1) + (K+1)(K+1-1)$ $= \frac{ K+1 }{ S } (K-1) + (K+1)(K+1-1) $ by the inductive Monthly by the in
	$=\frac{3}{K(\kappa_{3}-1)}+\frac{3}{(\kappa+1)\kappa}$ $=\frac{3}{K(\kappa_{3}-1)}+\frac{3}{(\kappa+1)}+\frac{3}{(\kappa+1)}$
	$= \frac{(k+1)k \left[\frac{3}{k-1} + 1 \right]}{3}$
	= K(K+1)/K, K+2 = K(K+1)/K, K+2
	Therefore, $\sum_{j=1}^{K+1} i(j-1) = \frac{K(K+1)(K+2)}{3}$
(e)	For any non-negative sitteger n , $\sum_{j \neq 0}^{n} \left(\frac{n}{3} \right) = \frac{3}{4} \left[\frac{n}{3} \cdot \frac{3}{1} \right] = \frac{3}{4}$
	Proof. By Production on n. Base case?
	$n = 0$, $\sum_{j = 0}^{n} \overline{1 \cdot 3} = 0$ and $\overline{4}[0 - 1 \cdot 1 + 1] = 0$, so equality holds who nzo. Inductive $s + epz$
	Assume that $[x + 3]$ a non-negative heleserand $[x + 3] = \frac{1}{4}[x + 3] = \frac{1}{4}[x + 3]$ Show that $[x + 3] = \frac{3}{4}[(x + 1) + 3] = \frac{1}{4}[x + 3]$

