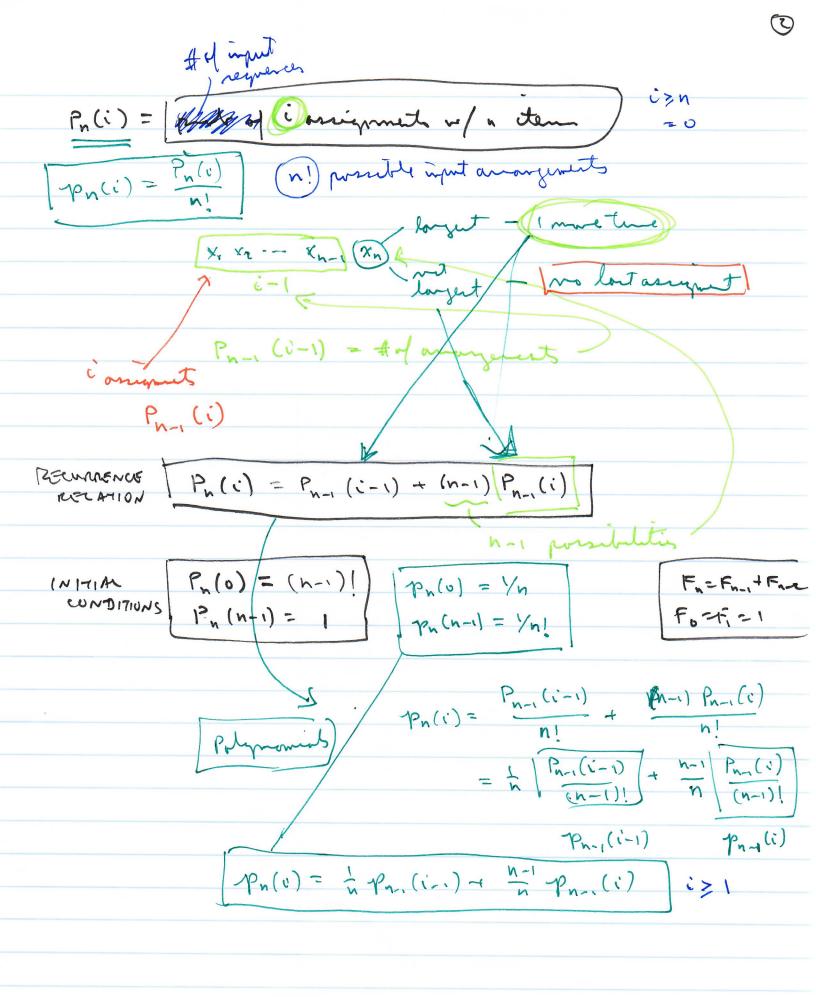
me 1 for ht 2 tindo find many in x, ... Xn 1 xh > xm | m = h | tow many times ? {Betwee 0 | warstone n-1 lu 160 = 5.7 X, X2 X3 - ·· Xn P3 (0) = 2 6×2 X, CX2 LX3 XICX3 < X2 B(1) =3 x2 < x, < x3 6 possible P3 (2) = 1 x2 < x3 < x1 Esta) X3 < X, < X2 xs < x2 < x1 16 70 5/6 equally likely inputs Expected value 2> 2 prob x with 1x\$1 = \$1 - mpented value / KNOW RANDUM: -\$1 -\$1 +\$1 3x(-\$1)+2(\$1) = -3\$1



$$P_{n}(x) = p_{n}(0)x^{0} + p_{n}(0)x^{i} + p_{n}(x)x^{2} + \cdots$$

$$P_{n}(x) = \sum_{i=0}^{\infty} p_{n}(i)x^{i}$$

$$P_{n}(x) = \sum_{i=0}^{\infty} p_{n}(x)$$

$$p_{n}'(x) = \frac{1}{m} \left[\frac{x+n-1}{n} p_{n-1}(x) + \frac{x+n-1}{n} p_{n-1}'(x) + \frac{x+n-1}{n} p_{n-1}'$$

$$P_{n}'(1) = \frac{1}{n} + P_{n-1}'(1)$$

$$P_{n}'(1) = \frac{1}{n} + P_{n-1}'(1)$$

= h + h - + Pn-2(1)

= h - h - 1 + p - 1 (1)

Pn'(1) = Hn-1

~ lnh

Expectation of a num = Sum of expectations