Ancillary statistics

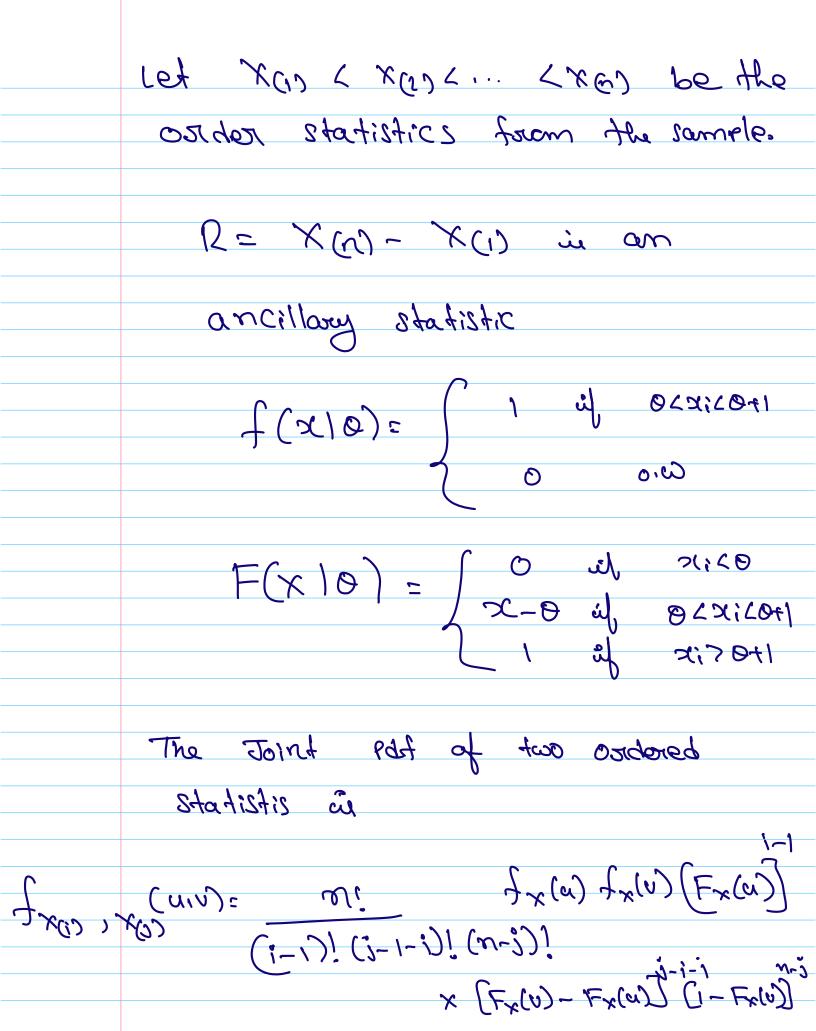
Det 6.2.16: A statistic S(x) whose distairantion does not depend on the rarange ten O in called a ancillary statistic.

- =) An ancillary stadistic contains no information about 8.
- e manual companies of the policy of the poli

Example 6.2.17 (Unitosum ancillary
Statistic)

X1, x2, ... > Xn 2/2 mif (0,041)

-2606.



$$k(i) = \frac{3}{5} \frac{1}{4} \frac{3}{5}$$

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$$= \frac{1}{5} \frac{1}{$$

$$\frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2}$$

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= + (2/0)= N(W-1) 2/2-5 (1-21) 062161 R ~ befa (n-1,2) R abes not depend on 0 => R in a ancillary statistic. Example 6.2.18: Clocation family ancillary statistic) KIDKZI... Xn 00 location Paxameter family with CDF F(x-0) -BLOCD. we will show that R= xm - xm ù a ancillary Statistic. => Z1, Z2, ..., Zn ~ F(x) (0-0)

X1=21+0, ... xn=2n+0.

FR(2/0) = PO(R <2)

= 160 (wave x! - win x! \ 20)

= RD (mare (5:40) - 201, (5:40) (2)

= 16 (wax 5! - win 5! \ \ 21)

independent of 0

=> R à ancillary statistic son