There are (6) = 20 equally likely

provibilities to consider. I'll list what the

ranks would be in the first sample.

Ranles	· W	Ronks	W	
123	6	234	9	
124	7	235	(0)	
125	8	236	(1	
126	5 9	245	(1	
134	8	246	12	
135	9	256	13	
136	10	345	(2	
145	(0	346	13	
146	11	356	14	
156	12	456	15	

Null	drutin beton:
W 6 7 8 9 (0	Prob:
13	.15
Name and particular a	

tor a level-0.23
two-tailed fest, we would regard the of

W = 7 or

W = 14.

2) There are (3)=10 possibilities. I will hist
the rinler for the values from the

Frut	sample.
. ,	

Ranks	TS	Ranks	TS statistic
123	6	145	2
124	0	234	0
125	(235	Ω.
134	0	245	2
135	1 5	345	3

		: northeaterth	3
	TS	Pmb.	To a
	D	0,4	
	1	0.3	1
	2	0,2	
\	3	0.1	

(3) @ We test Ho: Listening to statistics

talks has no effect on will yield

against Ha: Listening to statistics

talks has some effect on will yield.

I'll do a permetation test. The absolute differences are 2,4 and 3.

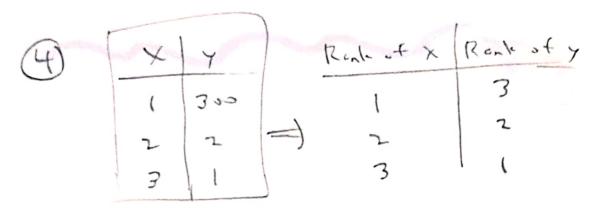
 $\frac{3}{4} + \frac{4}{4} + \frac{5um}{9} = \frac{1}{4} = \frac{1}{4}$ $\frac{3}{4} + \frac{1}{4} + \frac{1}{4} = \frac{$

_ + - 5 - 3

- - + 5 5

Since it = 0.25, no reject (to) At level
0.25, ne conclude that listening to statistics
talks has an effect on milk yield.

(b) We could have done a styn test or a styned ronk test. The prairie would have been the same for these data.



Since the roots are perfectly negatively correlated, to=-1. However, since the (x,y) points don't fall on a line,

- (5) @ I used the Krusked-Wallis text to

 text the Heaving height has no effect

 on phosphorous content (mg = m10 = m20)

 against the Howing hought has some effect

 on phosphorous content (mg, m10, and m20 are

 not all equal). Since the produce has

 0.567178.19, I retained to. Three wint

 sufficient evidence to conclude at level 0.10

 that noming height has an effect on

 phosphorous content.
 - (B) I could have wood a permetation F test.

6 I must politely disagree. Though the vonte sum test doosn't use the vow data, ATRE calculations show that under a skift model, the vonte sum test is never much less efficient (In terms of prover) than the t test, while sometimes being far more efficient. Also, unlike the t test, the rook sum test controls & even for non-normal data.

100= runs. The estimated powers were 0.234 (vaniel sum) 0.187 (Arran-Bradley), and 0.134 (K-s). Thus It appoins that the Trank runs test has the best power to dotact the difference of interests

@ Ho: O. 5 = 0.5 V5 Ha: O. 5 > 0.5. I will use the sign test since there is no reason to expect Symmetry. B = # values greater than 0.5 = 6. - P-value = P(B = 6 | B~ Box (8, 1)) $= \binom{8}{6} (\frac{1}{2})^8 + \binom{8}{7} (\frac{1}{2})^5 + \binom{8}{8} (\frac{1}{2})^8 \approx 10.145$ Since 0.145 >0.05, I Tretain Ho. There 75 not enough evidence to conclude at level 0.05 that the median exceeds 0.5. (b) Since n=8, the coverage for the prediction

(b) Since n = 8, the coverage for the prediction interval (X(x), X(s)) ($1 \le x \le s \le n$) is $\frac{s-r}{n+1} = \frac{s-r}{q}$. To get at least 75%.

Coverage, we need $s-r \ge 0.75(q) = 6.75$ =) Only (X(s), X(s)) = [(.045, .980]] will give a two-sided interval. The exact coverage probability is $\frac{7}{q} = [77.8\%]$