Nama : Johannes Yosua M.
Nim : 215314105

①

Weight method	Groove method	Difference
30.5	28.7	1.8
30.9	25.9	5
31.9	23.3	8.6
30.4	23.1	7.3
27.3	23.7	3.6
20.4	20.9	-0.5
24.5	16.1	8.4
20.9	19.9	1
18.9	15.2	3.7
13.7	11.5	2.2
11.4	11.2	0.2

$\Sigma d_i = 41.3$

☆ $t_{\alpha/2} = t_{0.05/2} = t_{0.025} = 2.228$

☆ $df = n - 1 = 11 - 1 = 10$

☆ Uji Hitung

- $\bar{d} = \frac{\Sigma d_i}{n} = \frac{41.3}{11} = 3.754$
- $s_d = \sqrt{\frac{\Sigma d_i^2 - (\Sigma d_i)^2/n}{n-1}} = \sqrt{\frac{258,83 - (41.3)^2/11}{11-1}} = 3.221$
- $\bar{d} \pm t_{\alpha/2} \cdot \frac{s_d}{\sqrt{n}} \rightarrow 3.754 \pm 2.228 \cdot \frac{3.221}{\sqrt{11}}$

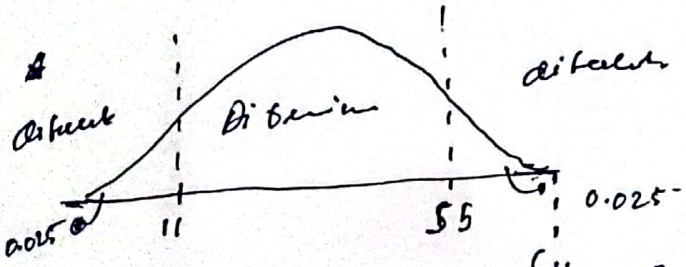
3.754 ± 2.163

☆ Kita meyakini 95 %, Perbedaan rata - rata Pengukuran metode weight dan Groove adalah 1,59 - 5.91

②

Paired diff d	$\lvert d \rvert$	Rank of $\lvert d \rvert$	Signed Rank R
1.0	1.0	4	4
5	5	8	8
0.6	0.6	11	11
7.3	7.3	9	9
3.6	3.6	6	6
-0.5	0.5	2	-2
0.4	0.4	10	10
1	1	3	3
3.7	3.7	7	7
2.2	2.2	5	5
0.2	0.2	1	1

* $W = 4 + 8 + 11 + \dots = 64$
* $H_0 : \mu_1 = \mu_2$
  $H_a : \mu_1 \neq \mu_2$
* 5 % → $\alpha = 0.05$
* $W_1 - A = n(n+1)/2 - WA$
  $W_1 - 0.025 \equiv 11(11+1)/2 - W_{0.025}$
  $= 66 - 55$
  $= 11$



64 → H_0 = Ditolak

* Di tingkat signifikansi 5 %, kita dapat lebih berhati hati - hati disebabkan pengukuran hasilnya berbeda.