**Lampiran 10**

**ANALISIS DATA PENELITIAN**

KLASIFIKASI NILAI *PRE-TEST* SISWA

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **NAMA SISWA** | **SKOR PRE-TEST** | **KLASIFIKASI** |
| 1 | KL | 40 | Tidak Tuntas |
| 2 | HR | 40 | Tidak Tuntas |
| 3 | MH | 65 | Tidak tuntas |
| 4 | MJ | 55 | Tidak Tuntas |
| 5 | MU | 70 | Tuntas |
| 6 | MF | 30 | Tidak Tuntas |
| 7 | RM | 55 | Tidak Tuntas |
| 8 | RA | 55 | Tidak Tuntas |
| 9 | RN | 45 | Tidak Tuntas |
| 10 | RS | 50 | Tidak Tuntas |
| 11 | RAS | 60 | Tidak Tuntas |
| 12 | NA | 45 | Tidak Tuntas |
| 13 | NAA | 30 | Tidak Tuntas |
| 14 | NB | 25 | Tidak Tuntas |
| 15 | NF | 25 | Tidak Tuntas |
| 16 | NY | 40 | Tidak Tuntas |
| 17 | NJ | 30 | Tidak Tuntas |
| 18 | NH | 35 | Tidak Tuntas |
| 19 | NW | 40 | Tidak Tuntas |
| 20 | RW | 40 | Tidak Tuntas |
| 21 | SA | 40 | Tidak Tuntas |
| 22 | WD | 50 | Tidak Tuntas |
| 23 | AS | 40 | Tidak Tuntas |

**Lampiran 11**

**ANALISIS DATA PENELITIAN**

KLASIFIKASI NILAI *POST-TEST* SISWA

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **NAMA SISWA** | **SKOR POST-TEST** | **KLASIFIKASI** |
| 1 | KL | 90 | Tuntas |
| 2 | HR | 75 | Tuntas |
| 3 | MH | 80 | Tuntas |
| 4 | MJ | 90 | Tuntas |
| 5 | MU | 85 | Tuntas |
| 6 | MF | 70 | Tuntas |
| 7 | RM | 85 | Tuntas |
| 8 | RA | 80 | Tuntas |
| 9 | RN | 70 | Tuntas |
| 10 | RS | 65 | Tidak Tuntas |
| 11 | RAS | 70 | Tuntas |
| 12 | NA | 80 | Tuntas |
| 13 | NAA | 85 | Tuntas |
| 14 | NB | 60 | Tidak Tuntas |
| 15 | NF | 45 | Tidak Tuntas |
| 16 | NY | 60 | Tidak Tuntas |
| 17 | NJ | 70 | Tuntas |
| 18 | NH | 80 | Tuntas |
| 19 | NW | 75 | Tuntas |
| 20 | RW | 50 | Tuntas |
| 21 | SA | 75 | Tuntas |
| 22 | WD | 90 | Tuntas |
| 23 | AS | 85 | Tidak Tuntas |

**Lampiran 12**

**PERHITUNGAN NILAI UJI MEAN TERHADAP DATA HASIL *PRE-TEST* DAN *POST-TEST* SISWA**

1. **STANDAR DEVIASI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Pre-test****(X1)** | $$X1^{2}$$ | **Post-test****(Y2)** | $$y2^{2}$$ | **(D)****(Y2- X1)** | $$D^{2}$$ |
| 1 | 40 | 1600 | 90 | 8100 | 10 | 100 |
| 2 | 40 | 1600 | 75 | 5625 | 25 | 625 |
| 3 | 65 | 4225 | 80 | 6400 | 15 | 225 |
| 4 | 55 | 3025 | 90 | 8100 | 25 | 265 |
| 5 | 70 | 4900 | 85 | 7225 | 15 | 225 |
| 6 | 30 | 900 | 70 | 4900 | 40 | 1600 |
| 7 | 55 | 3025 | 85 | 7225 | 30 | 900 |
| 8 | 55 | 3025 | 80 | 6400 | 15 | 225 |
| 9 | 45 | 2025 | 70 | 4900 | 25 | 625 |
| 10 | 50 | 2500 | 65 | 4225 | 10 | 100 |
| 11 | 60 | 3600 | 70 | 4900 | 10 | 100 |
| 12 | 45 | 2025 | 80 | 6400 | 5 | 25 |
| 13 | 30 | 900 | 85 | 7225 | 40 | 1600 |
| 14 | 25 | 625 | 60 | 3600 | 25 | 265 |
| 15 | 25 | 625 | 45 | 2025 | 15 | 225 |
| 16 | 40 | 1600 | 60 | 3600 | 10 | 100 |
| 17 | 30 | 900 | 70 | 4900 | 40 | 1600 |
| 18 | 35 | 1225 | 80 | 6400 | 35 | 1225 |
| 19 | 40 | 1600 | 75 | 5625 | 30 | 900 |
| 20 | 40 | 1600 | 50 | 2500 | 10 | 100 |
| 21 | 40 | 1600 | 75 | 5625 | 35 | 1225 |
| 22 | 50 | 2500 | 90 | 8100 | 20 | 400 |
| 23 | 40 | 1600 | 85 | 7225 | 10 | 100 |
| **N** | **1005** | **47225** | **1715** | **131225** | **495** | **12755** |
|  | **43,6956** | **2053,2608** | **74,5652** | **5705,435** | **21,5217** | **554,1304** |

1. Mencari nilai mean *Pretest* (X) dan *Postest* (Y) dengan rumus:

$$a. M\_{x}=\frac{∑X}{N}$$

$$ =\frac{1005}{23}$$

$ =43,6956$

$$b. M\_{y}=\frac{∑Y}{N}$$

$$ =\frac{1715}{23}$$

$$ =74,5652$$

1. Mencari standar deviasi kuadrat kelompok X dan Y rumus:

$$a. SDx^{2}=\frac{\sum\_{}^{}x^{2}}{N}-Mx^{2}$$

$$ =\frac{47225}{23}-\left(43,6956\right)^{2}$$

$$ =2053,2608-1909,3054 $$

$$=143,9554$$

$$b. SDy^{2}=\frac{\sum\_{}^{}y^{2}}{N}-My^{2}$$

$$ =\frac{131225}{23}-(74.56522)^{2}$$

$$ =5705,4347-5559,5216$$

$$ =145,9131$$

1. Mencari standar deviasi mean kuadrat dari Posttest dan Pretest dengan rumus:

$$a. SD^{2}M\_{x}=\frac{SD\_{x^{2}}}{N -1}$$

$$ =\frac{143,9554}{23 -1}$$

$$ =\frac{145,32}{22}$$

$$ =6,5434$$

$$b. SD^{2}M\_{y}=\frac{SD\_{y^{2}}}{N -1}$$

$$ =\frac{145,9131}{23 -1}$$

$$ =\frac{145,9131}{22}$$

$$ =6,6324$$

1. Mencari SDbm menggunakan rumus

SDbm = $\sqrt{SD^{2}M\_{x}+ SD^{2}M\_{y}}$

$$ =\sqrt{6,5434+6,6324}$$

$$ =\sqrt{13,1754}$$

$$ =3,6297$$

1. Selanjutnya sudah dapat digunakan rumus t-test

$$a. t-test= \frac{M\_{y}-M\_{x}}{SD\_{bm}}$$

$$ = \frac{74,5652-43,6956}{3,6297}$$

$$ =\frac{30,8689}{3,6297}$$

$$ =8,5047$$

$$b. d.b=\left(Nx+Ny\right)-2$$

$$ =\left(23+23\right)-2$$

$$ =46-2$$

$$ =44$$

**Lampiran 13**

Tabel Nilai t

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pr****df** | **0.25** | **0.10** | **0.05** | **0.025** | **0.01** | **0.005** | **0.001** |
| **0.50** | **0.20** | **0.10** | **0.050** | **0.02** | **0.010** | **0.002** |
| **41** | 0.68052 | 1.30254 | 1.68288 | 2.01954 | 2.42080 | 2.70118 | 3.30127 |
| **42** | 0.68038 | 1.30204 | 1.68195 | 2.01808 | 2.41847 | 2.69807 | 3.29595 |
| **43** | 0.68024 | 1.30155 | 1.68107 | 2.01669 | 2.41625 | 2.69510 | 3.29089 |
| **44** | 0.68011 | 1.30109 | **1.68023** | 2.01537 | 2.41413 | 2.69228 | 3.28607 |
| **45** | 0.67998 | 1.30065 | 1.67943 | 2.01410 | 2.41212 | 2.68959 | 3.28148 |
| **46** | 0.67986 | 1.30023 | 1.67866 | 2.01290 | 2.41019 | 2.68701 | 3.27710 |
| **47** | 0.67975 | 1.29982 | 1.67793 | 2.01174 | 2.40835 | 2.68456 | 3.27291 |
| **48** | 0.67964 | 1.29944 | 1.67722 | 2.01063 | 2.40658 | 2.68220 | 3.26891 |
| **49** | 0.67953 | 1.29907 | 1.67655 | 2.00958 | 2.40489 | 2.67995 | 3.26508 |
| **50** | 0.67943 | 1.29871 | 1.67591 | 2.00856 | 2.40327 | 2.67779 | 3.26141 |
| **51** | 0.67933 | 1.29837 | 1.67528 | 2.00758 | 2.40172 | 2.67572 | 3.25789 |
| **52** | 0.67924 | 1.29805 | 1.67469 | 2.00665 | 2.40022 | 2.67373 | 3.25451 |
| **53** | 0.67915 | 1.29773 | 1.67412 | 2.00575 | 2.39879 | 2.67182 | 3.25127 |
| **54** | 0.67906 | 1.29743 | 1.67356 | 2.00488 | 2.39741 | 2.66998 | 3.24815 |
| **55** | 0.67898 | 1.29713 | 1.67303 | 2.00404 | 2.39608 | 2.66822 | 3.24515 |
| **56** | 0.67890 | 1.29685 | 1.67252 | 2.00324 | 2.39480 | 2.66651 | 3.24226 |
| **57** | 0.67882 | 1.29658 | 1.67203 | 2.00247 | 2.39357 | 2.66487 | 3.23948 |
| **58** | 0.67874 | 1.29632 | 1.67155 | 2.00172 | 2.39238 | 2.66329 | 3.23680 |
| **59** | 0.67867 | 1.29607 | 1.67109 | 2.00100 | 2.39123 | 2.66176 | 3.23421 |
| **60** | 0.67860 | 1.29582 | 1.67065 | 2.00030 | 2.39012 | 2.66028 | 3.23171 |
| **61** | 0.67853 | 1.29558 | 1.67022 | 1.99962 | 2.38905 | 2.65886 | 3.22930 |
| **62** | 0.67847 | 1.29536 | 1.66980 | 1.99897 | 2.38801 | 2.65748 | 3.22696 |
| **63** | 0.67840 | 1.29513 | 1.66940 | 1.99834 | 2.38701 | 2.65615 | 3.22471 |
| **64** | 0.67834 | 1.29492 | 1.66901 | 1.99773 | 2.38604 | 2.65485 | 3.22253 |
| **65** | 0.67828 | 1.29471 | 1.66864 | 1.99714 | 2.38510 | 2.65360 | 3.22041 |
| **66** | 0.67823 | 1.29451 | 1.66827 | 1.99656 | 2.38419 | 2.65239 | 3.21837 |
| **67** | 0.67817 | 1.29432 | 1.66792 | 1.99601 | 2.38330 | 2.65122 | 3.21639 |
| 68 | 0.67811 | 1.29413 | 1.66757 | 1.99547 | 2.38245 | 2.65008 | 3.21446 |
| **69** | 0.67806 | 1.29394 | 1.66724 | 1.99495 | 2.38161 | 2.64898 | 3.21260 |
| **70** | 0.67801 | 1.29376 | 1.66691 | 1.99444 | 2.38081 | 2.64790 | 3.21079 |
| **71** | 0.67796 | 1.29359 | 1.66660 | 1.99394 | 2.38002 | 2.64686 | 3.20903 |
| **72** | 0.67791 | 1.29342 | 1.66629 | 1.99346 | 2.37926 | 2.64585 | 3.20733 |
| **73** | 0.67787 | 1.29326 | 1.66600 | 1.99300 | 2.37852 | 2.64487 | 3.20567 |
| **74** | 0.67782 | 1.29310 | 1.66571 | 1.99254 | 2.37780 | 2.64391 | 3.20406 |
| **75** | 0.67778 | 1.29294 | 1.66543 | 1.99210 | 2.37710 | 2.64298 | 3.20249 |
| **76** | 0.67773 | 1.29279 | 1.66515 | 1.99167 | 2.37642 | 2.64208 | 3.20096 |
| **77** | 0.67769 | 1.29264 | 1.66488 | 1.99125 | 2.37576 | 2.64120 | 3.19948 |
| **78** | 0.67765 | 1.29250 | 1.66462 | 1.99085 | 2.37511 | 2.64034 | 3.19804 |
| **79** | 0.67761 | 1.29236 | 1.66437 | 1.99045 | 2.37448 | 2.63950 | 3.19663 |
| **80** | 0.67757 | 1.29222 | 1.66412 | 1.99006 | 2.37387 | 2.63869 | 3.19526 |