**LAMPIRAN PERHITUNGAN TES KEMAMPUAN KOMUNIKASI MATEMATIS**

**1. Validitas**

**DAFTAR HASIL UJI INSTRUMEN TES**

**KEMAMPUAN KOMUNIKASI MATEMATIS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Aisyah Nagita Putri | 3 | 3 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 21 |
| 2 | Al Kautsar Diniantama | 2 | 4 | 3 | 1 | 3 | 3 | 2 | 4 | 3 | 4 | 29 |
| 3 | Alifta Dara Dinanti | 2 | 4 | 2 | 4 | 3 | 2 | 1 | 2 | 4 | 1 | 25 |
| 4 | Alisha Shafia Al Raudha | 3 | 3 | 1 | 1 | 4 | 3 | 3 | 4 | 2 | 3 | 27 |
| 5 | Alvis Sunggu Aritonang | 1 | 1 | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 14 |
| 6 | Amar Fadilah | 2 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 11 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 4 | 2 | 3 | 2 | 0 | 1 | 2 | 3 | 4 | 25 |
| 8 | Aqila Zayyan Salsabil | 4 | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 3 | 3 | 23 |
| 9 | Azril Tri Zaputra | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 10 |
| 10 | Carisa Saharani | 4 | 2 | 3 | 2 | 1 | 4 | 2 | 0 | 0 | 2 | 20 |
| 11 | Dhean Rayandha | 2 | 3 | 2 | 4 | 0 | 2 | 4 | 3 | 2 | 1 | 23 |
| 12 | Dimas Duta | 4 | 0 | 0 | 1 | 3 | 2 | 0 | 1 | 2 | 1 | 14 |
| 13 | Habib Burrohman | 1 | 4 | 0 | 2 | 1 | 0 | 2 | 3 | 2 | 2 | 17 |
| 14 | Hafizd Nazzarallah Arroyan | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 31 |
| 15 | Hani Qurrota'aini | 4 | 3 | 3 | 4 | 2 | 4 | 2 | 3 | 0 | 3 | 28 |
| 16 | Intan Mauli Febrianti | 3 | 4 | 4 | 0 | 0 | 3 | 2 | 3 | 3 | 2 | 24 |
| 17 | Iqbal Dwi Ainun Jannah | 2 | 4 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 4 | 21 |
| 18 | Jhon Fernando | 3 | 4 | 2 | 2 | 0 | 3 | 4 | 3 | 2 | 4 | 27 |
| 19 | Kanastren Ajeng Pembayun | 0 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 31 |
| 20 | M. Bintang Perkasa S | 2 | 3 | 4 | 3 | 3 | 4 | 2 | 0 | 1 | 4 | 26 |
| 21 | M. Farrel Pauleva | 1 | 3 | 4 | 3 | 2 | 4 | 4 | 3 | 2 | 4 | 30 |
| 22 | M. Fathan Yuriansyah Ramadhan | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 34 |
| 23 | Manja Anisya | 3 | 4 | 3 | 4 | 1 | 1 | 1 | 3 | 2 | 3 | 25 |
| 24 | Nazla Ghina Censia | 2 | 3 | 1 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 29 |
| 25 | Paradhita Ariani | 4 | 3 | 3 | 0 | 3 | 2 | 4 | 1 | 0 | 3 | 23 |
| 26 | Reza Aulia Resti | 3 | 4 | 3 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 27 |
| 27 | Riska Febri Oca | 2 | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 34 |
| 28 | Surya Prayoga | 2 | 4 | 4 | 0 | 1 | 1 | 4 | 4 | 3 | 4 | 27 |
| 29 | Taqiya Abyan Halza | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 36 |
| 30 | Teja Rahmawan Pubi Putra | 3 | 4 | 2 | 3 | 3 | 4 | 3 | 2 | 4 | 3 | 31 |
| 31 | Tika Sari Angraini | 2 | 3 | 4 | 4 | 1 | 2 | 3 | 3 | 4 | 2 | 28 |
| 32 | Yunitha Lestari Anggraini | 4 | 3 | 2 | 2 | 2 | 1 | 4 | 4 | 2 | 4 | 28 |
| **Jumlah** | | 82 | 97 | 78 | 77 | 65 | 77 | 80 | 81 | 74 | 88 |  |
| **Rhitung** | | 0,116 | 0,628 | 0,541 | 0,341 | 0,597 | 0,611 | 0,598 | 0,561 | 0,501 | 0,695 |  |
| **Rtabel** | | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 |  |
| **Kesimpulan** | | tidak valid | valid | valid | tidak valid | valid | valid | valid | valid | valid | valid |  |

**PERHITUNGAN UJI VALIDITAS BUTIR TES KEMAMPUAN KOMUNIKASI MATEMATIS**

Rumus yang digunakan:

*xi* : nilai jawaban responden pada butir soal ke-*i*

*yi* : nilai total responden ke-*i*

*rxy* : nilai koefisien korelasi pada butir soal ke-*i* sebelum dikoreksi

*n*  : jumlah peserta tes

Berikut ini salah satu contoh untuk butir no. 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **X1** | **XI2** | **Y** | **Y2** | **X1Y** |
| 1 | Aisyah Nagita Putri | 3 | 9 | 21 | 441 | 63 |
| 2 | Al Kautsar Diniantama | 2 | 4 | 29 | 841 | 58 |
| 3 | Alifta Dara Dinanti | 2 | 4 | 25 | 625 | 50 |
| 4 | Alisha Shafia Al Raudha | 3 | 9 | 27 | 729 | 81 |
| 5 | Alvis Sunggu Aritonang | 1 | 1 | 14 | 196 | 14 |
| 6 | Amar Fadilah | 2 | 4 | 11 | 121 | 22 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 16 | 25 | 625 | 100 |
| 8 | Aqila Zayyan Salsabil | 4 | 16 | 23 | 529 | 92 |
| 9 | Azril Tri Zaputra | 1 | 1 | 10 | 100 | 10 |
| 10 | Carisa Saharani | 4 | 16 | 20 | 400 | 80 |
| 11 | Dhean Rayandha | 2 | 4 | 23 | 529 | 46 |
| 12 | Dimas Duta | 4 | 16 | 14 | 196 | 56 |
| 13 | Habib Burrohman | 1 | 1 | 17 | 289 | 17 |
| 14 | Hafizd Nazzarallah Arroyan | 2 | 4 | 31 | 961 | 62 |
| 15 | Hani Qurrota'aini | 4 | 16 | 28 | 784 | 112 |
| 16 | Intan Mauli Febrianti | 3 | 9 | 24 | 576 | 72 |
| 17 | Iqbal Dwi Ainun Jannah | 2 | 4 | 21 | 441 | 42 |
| 18 | Jhon Fernando | 3 | 9 | 27 | 729 | 81 |
| 19 | Kanastren Ajeng Pembayun | 0 | 0 | 31 | 961 | 0 |
| 20 | M. Bintang Perkasa S | 2 | 4 | 26 | 676 | 52 |
| 21 | M. Farrel Pauleva | 1 | 1 | 30 | 900 | 30 |
| 22 | M. Fathan Yuriansyah Ramadhan | 4 | 16 | 34 | 1156 | 136 |
| 23 | Manja Anisya | 3 | 9 | 25 | 625 | 75 |
| 24 | Nazla Ghina Censia | 2 | 4 | 29 | 841 | 58 |
| 25 | Paradhita Ariani | 4 | 16 | 23 | 529 | 92 |
| 26 | Reza Aulia Resti | 3 | 9 | 27 | 729 | 81 |
| 27 | Riska Febri Oca | 2 | 4 | 34 | 1156 | 68 |
| 28 | Surya Prayoga | 2 | 4 | 27 | 729 | 54 |
| 29 | Taqiya Abyan Halza | 3 | 9 | 36 | 1296 | 108 |
| 30 | Teja Rahmawan Pubi Putra | 3 | 9 | 31 | 961 | 93 |
| 31 | Tika Sari Angraini | 2 | 4 | 28 | 784 | 56 |
| 32 | Yunitha Lestari Anggraini | 4 | 16 | 28 | 784 | 112 |
| **Jumlah** | | 82 | 248 | 799 | 21239 | 2073 |

Perhitungan:

Karena telah ditetapkan bahwa butir soal dikatakan valid jika memiliki rhitung > rtabel. Dengan melihat tabel r product moment n = 32 dengan taraf signifikan 0,05, maka didapat rtabel = 0,349 dan dari perhitungan diperoleh rhitung = 0,116 sehingga 0,116 < 0,349. Maka butir soal no 1 tersebut dikategorikan tidak valid, atau dengan kata lain soal tersebut tidak dapat digunakan.

**2. Tingkat Kesukaran**

**HASIL UJI COBA TINGKAT KESUKARAN SOAL KEMAMPUAN KOMUNIKASI MATEMATIS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Aisyah Nagita Putri | 3 | 3 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 21 |
| 2 | Al Kautsar Diniantama | 2 | 4 | 3 | 1 | 3 | 3 | 2 | 4 | 3 | 4 | 29 |
| 3 | Alifta Dara Dinanti | 2 | 4 | 2 | 4 | 3 | 2 | 1 | 2 | 4 | 1 | 25 |
| 4 | Alisha Shafia Al Raudha | 3 | 3 | 1 | 1 | 4 | 3 | 3 | 4 | 2 | 3 | 27 |
| 5 | Alvis Sunggu Aritonang | 1 | 1 | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 14 |
| 6 | Amar Fadilah | 2 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 11 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 4 | 2 | 3 | 2 | 0 | 1 | 2 | 3 | 4 | 25 |
| 8 | Aqila Zayyan Salsabil | 4 | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 3 | 3 | 23 |
| 9 | Azril Tri Zaputra | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 10 |
| 10 | Carisa Saharani | 4 | 2 | 3 | 2 | 1 | 4 | 2 | 0 | 0 | 2 | 20 |
| 11 | Dhean Rayandha | 2 | 3 | 2 | 4 | 0 | 2 | 4 | 3 | 2 | 1 | 23 |
| 12 | Dimas Duta | 4 | 0 | 0 | 1 | 3 | 2 | 0 | 1 | 2 | 1 | 14 |
| 13 | Habib Burrohman | 1 | 4 | 0 | 2 | 1 | 0 | 2 | 3 | 2 | 2 | 17 |
| 14 | Hafizd Nazzarallah Arroyan | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 31 |
| 15 | Hani Qurrota'aini | 4 | 3 | 3 | 4 | 2 | 4 | 2 | 3 | 0 | 3 | 28 |
| 16 | Intan Mauli Febrianti | 3 | 4 | 4 | 0 | 0 | 3 | 2 | 3 | 3 | 2 | 24 |
| 17 | Iqbal Dwi Ainun Jannah | 2 | 4 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 4 | 21 |
| 18 | Jhon Fernando | 3 | 4 | 2 | 2 | 0 | 3 | 4 | 3 | 2 | 4 | 27 |
| 19 | Kanastren Ajeng Pembayun | 0 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 31 |
| 20 | M. Bintang Perkasa S | 2 | 3 | 4 | 3 | 3 | 4 | 2 | 0 | 1 | 4 | 26 |
| 21 | M. Farrel Pauleva | 1 | 3 | 4 | 3 | 2 | 4 | 4 | 3 | 2 | 4 | 30 |
| 22 | M. Fathan Yuriansyah Ramadhan | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 34 |
| 23 | Manja Anisya | 3 | 4 | 3 | 4 | 1 | 1 | 1 | 3 | 2 | 3 | 25 |
| 24 | Nazla Ghina Censia | 2 | 3 | 1 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 29 |
| 25 | Paradhita Ariani | 4 | 3 | 3 | 0 | 3 | 2 | 4 | 1 | 0 | 3 | 23 |
| 26 | Reza Aulia Resti | 3 | 4 | 3 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 27 |
| 27 | Riska Febri Oca | 2 | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 34 |
| 28 | Surya Prayoga | 2 | 4 | 4 | 0 | 1 | 1 | 4 | 4 | 3 | 4 | 27 |
| 29 | Taqiya Abyan Halza | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 36 |
| 30 | Teja Rahmawan Pubi Putra | 3 | 4 | 2 | 3 | 3 | 4 | 3 | 2 | 4 | 3 | 31 |
| 31 | Tika Sari Angraini | 2 | 3 | 4 | 4 | 1 | 2 | 3 | 3 | 4 | 2 | 28 |
| 32 | Yunitha Lestari Anggraini | 4 | 3 | 2 | 2 | 2 | 1 | 4 | 4 | 2 | 4 | 28 |
| **B** | | **82** | **97** | **78** | **77** | **65** | **77** | **80** | **81** | **74** | **88** | **799** |
| **Smi** | | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** |  |
| **n** | | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** |  |
| **J** | | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** |  |
| **I** | | **0,641** | **0,758** | **0,609** | **0,602** | **0,508** | **0,602** | **0,625** | **0,633** | **0,578** | **0,688** |  |
| **Kesimpulan** | | **sedang** | **mudah** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** |  |

**HASIL PERHITUNGAN TINGKAT KESUKARAN TIAP BUTIR SOAL**

**TES KEMAMPUAN KOMUNIKASI MATEMATIS**

Rumus yang digunakan:

Keterangan:

*I* : Indeks kesukaran tiap butir soal

*B* : Banyaknya siswa yang menjawab benar tiap butir soal

*J* : Banyaknya siswa yang memberikan jawaban pada soal yang

dimaksudkan

|  |  |  |
| --- | --- | --- |
| **No.** | **Angka Indkes Kesukaran Butir Tes** | **Keterangan** |
| 1 | 82/128 | 0,641 |
| 2 | 97/128 | 0,758 |
| 3 | 78/128 | 0,609 |
| 4 | 77/128 | 0,602 |
| 5 | 65/128 | 0,508 |
| 6 | 77/128 | 0,602 |
| 7 | 80/128 | 0,625 |
| 8 | 81/128 | 0,633 |
| 9 | 74/128 | 0,578 |
| 10 | 88/128 | 0,688 |

**Tabel**

**Interprestasi Tingkat Kesukaran Butir Tes**

|  |  |
| --- | --- |
| **Indeks Kesukaran** | **Kategori** |
| 0,0 0,3 | Sukar |
| 0,3 0,7 | Sedang |
| 0,7 | Mudah |

**3. Daya Beda**

**ANALISIS DAYA BEDA BUTIR SOAL**

**TES KEMAMPUAN KOMUNIKASI MATEMATIS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 29 | Taqiya Abyan Halza | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 36 |
| 22 | M. Fathan Yuriansyah Ramadhan | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 34 |
| 27 | Riska Febri Oca | 2 | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 34 |
| 14 | Hafizd Nazzarallah Arroyan | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 31 |
| 19 | Kanastren Ajeng Pembayun | 0 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 31 |
| 30 | Teja Rahmawan Pubi Putra | 3 | 4 | 2 | 3 | 3 | 4 | 3 | 2 | 4 | 3 | 31 |
| 21 | M. Farrel Pauleva | 1 | 3 | 4 | 3 | 2 | 4 | 4 | 3 | 2 | 4 | 30 |
| 2 | Al Kautsar Diniantama | 2 | 4 | 3 | 1 | 3 | 3 | 2 | 4 | 3 | 4 | 29 |
| 24 | Nazla Ghina Censia | 2 | 3 | 1 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 29 |
| 15 | Hani Qurrota'aini | 4 | 3 | 3 | 4 | 2 | 4 | 2 | 3 | 0 | 3 | 28 |
| 31 | Tika Sari Angraini | 2 | 3 | 4 | 4 | 1 | 2 | 3 | 3 | 4 | 2 | 28 |
| 32 | Yunitha Lestari Anggraini | 4 | 3 | 2 | 2 | 2 | 1 | 4 | 4 | 2 | 4 | 28 |
| 4 | Alisha Shafia Al Raudha | 3 | 3 | 1 | 1 | 4 | 3 | 3 | 4 | 2 | 3 | 27 |
| 18 | Jhon Fernando | 3 | 4 | 2 | 2 | 0 | 3 | 4 | 3 | 2 | 4 | 27 |
| 26 | Reza Aulia Resti | 3 | 4 | 3 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 27 |
| 28 | Surya Prayoga | 2 | 4 | 4 | 0 | 1 | 1 | 4 | 4 | 3 | 4 | 27 |
| 20 | M. Bintang Perkasa S | 2 | 3 | 4 | 3 | 3 | 4 | 2 | 0 | 1 | 4 | 26 |
| 3 | Alifta Dara Dinanti | 2 | 4 | 2 | 4 | 3 | 2 | 1 | 2 | 4 | 1 | 25 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 4 | 2 | 3 | 2 | 0 | 1 | 2 | 3 | 4 | 25 |
| 23 | Manja Anisya | 3 | 4 | 3 | 4 | 1 | 1 | 1 | 3 | 2 | 3 | 25 |
| 16 | Intan Mauli Febrianti | 3 | 4 | 4 | 0 | 0 | 3 | 2 | 3 | 3 | 2 | 24 |
| 8 | Aqila Zayyan Salsabil | 4 | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 3 | 3 | 23 |
| 11 | Dhean Rayandha | 2 | 3 | 2 | 4 | 0 | 2 | 4 | 3 | 2 | 1 | 23 |
| 25 | Paradhita Ariani | 4 | 3 | 3 | 0 | 3 | 2 | 4 | 1 | 0 | 3 | 23 |
| 1 | Aisyah Nagita Putri | 3 | 3 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 21 |
| 17 | Iqbal Dwi Ainun Jannah | 2 | 4 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 4 | 21 |
| 10 | Carisa Saharani | 4 | 2 | 3 | 2 | 1 | 4 | 2 | 0 | 0 | 2 | 20 |
| 12 | Dimas Duta | 4 | 2 | 2 | 1 | 3 | 2 | 0 | 1 | 2 | 1 | 18 |
| 13 | Habib Burrohman | 1 | 4 | 0 | 2 | 1 | 0 | 2 | 3 | 2 | 2 | 17 |
| 5 | Alvis Sunggu Aritonang | 1 | 1 | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 14 |
| 6 | Amar Fadilah | 2 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 11 |
| 9 | Azril Tri Zaputra | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 10 |
| **Jumlah** | | 82 | 95 | 77 | 82 | 52 | 71 | 72 | 78 | 68 | 83 | 803 |

**PERHITUNGAN DAYA BEDA BUTIR SOAL TES**

**KEMAMPUAN KOMUNIKASI MATEMATIS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **KELOMPOK ATAS** | | | | | | | | | | **Total** |
| **Hasil Jawaban Siswa** | | | | | | | | | |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 29 | Taqiya Abyan Halza | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 36 |
| 22 | M. Fathan Yuriansyah R. | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 34 |
| 27 | Riska Febri Oca | 2 | 4 | 2 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 34 |
| 14 | Hafizd Nazzarallah Arroyan | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 3 | 2 | 31 |
| 19 | Kanastren Ajeng Pembayun | 0 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 31 |
| 30 | Teja Rahmawan Pubi Putra | 3 | 4 | 2 | 3 | 3 | 4 | 3 | 2 | 4 | 3 | 31 |
| 21 | M. Farrel Pauleva | 1 | 3 | 4 | 3 | 2 | 4 | 4 | 3 | 2 | 4 | 30 |
| 2 | Al Kautsar Diniantama | 2 | 4 | 3 | 1 | 3 | 3 | 2 | 4 | 3 | 4 | 29 |
| 24 | Nazla Ghina Censia | 2 | 3 | 1 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 29 |
| 15 | Hani Qurrota'aini | 4 | 3 | 3 | 4 | 2 | 4 | 2 | 3 | 0 | 3 | 28 |
| 31 | Tika Sari Angraini | 2 | 3 | 4 | 4 | 1 | 2 | 3 | 3 | 4 | 2 | 28 |
| 32 | Yunitha Lestari Anggraini | 4 | 3 | 2 | 2 | 2 | 1 | 4 | 4 | 2 | 4 | 28 |
| 4 | Alisha Shafia Al Raudha | 3 | 3 | 1 | 1 | 4 | 3 | 3 | 4 | 2 | 3 | 27 |
| 18 | Jhon Fernando | 3 | 4 | 2 | 2 | 0 | 3 | 4 | 3 | 2 | 4 | 27 |
| 26 | Reza Aulia Resti | 3 | 4 | 3 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 27 |
| 28 | Surya Prayoga | 2 | 4 | 4 | 0 | 1 | 1 | 4 | 4 | 3 | 4 | 27 |
|  | **PA** | 40 | 54 | 46 | 43 | 41 | 48 | 51 | 53 | 46 | 55 | 477 |
|  | **JA** | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |  |
|  | **PT** | 0,625 | 0,844 | 0,719 | 0,672 | 0,641 | 0,750 | 0,797 | 0,828 | 0,719 | 0,859 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **KELOMPOK BAWAH** | | | | | | | | | | **Total** |
| **Hasil Jawaban Siswa** | | | | | | | | | |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 20 | M. Bintang Perkasa S | 2 | 3 | 4 | 3 | 3 | 4 | 2 | 0 | 1 | 4 | 26 |
| 3 | Alifta Dara Dinanti | 2 | 4 | 2 | 4 | 3 | 2 | 1 | 2 | 4 | 1 | 25 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 4 | 2 | 3 | 2 | 0 | 1 | 2 | 3 | 4 | 25 |
| 23 | Manja Anisya | 3 | 4 | 3 | 4 | 1 | 1 | 1 | 3 | 2 | 3 | 25 |
| 16 | Intan Mauli Febrianti | 3 | 4 | 4 | 0 | 0 | 3 | 2 | 3 | 3 | 2 | 24 |
| 8 | Aqila Zayyan Salsabil | 4 | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 3 | 3 | 23 |
| 11 | Dhean Rayandha | 2 | 3 | 2 | 4 | 0 | 2 | 4 | 3 | 2 | 1 | 23 |
| 25 | Paradhita Ariani | 4 | 3 | 3 | 0 | 3 | 2 | 4 | 1 | 0 | 3 | 23 |
| 1 | Aisyah Nagita Putri | 3 | 3 | 1 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 21 |
| 17 | Iqbal Dwi Ainun Jannah | 2 | 4 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 4 | 21 |
| 10 | Carisa Saharani | 4 | 0 | 3 | 2 | 1 | 4 | 2 | 0 | 0 | 2 | 18 |
| 12 | Dimas Duta | 4 | 0 | 0 | 1 | 3 | 2 | 0 | 1 | 2 | 1 | 14 |
| 13 | Habib Burrohman | 1 | 4 | 0 | 2 | 1 | 0 | 2 | 3 | 2 | 2 | 17 |
| 5 | Alvis Sunggu Aritonang | 1 | 1 | 2 | 3 | 1 | 1 | 2 | 1 | 2 | 0 | 14 |
| 6 | Amar Fadilah | 2 | 1 | 1 | 2 | 0 | 0 | 1 | 1 | 2 | 1 | 11 |
| 9 | Azril Tri Zaputra | 1 | 1 | 2 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 10 |
|  | **PB** | 42 | 41 | 32 | 34 | 24 | 29 | 29 | 28 | 28 | 33 | 320 |
|  | **JB** | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |  |
|  | **PR** | 0,656 | 0,641 | 0,500 | 0,531 | 0,375 | 0,453 | 0,453 | 0,438 | 0,438 | 0,516 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Butir Soal** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **DB** | -0,031 | 0,203 | 0,219 | 0,141 | 0,266 | 0,297 | 0,344 | 0,391 | 0,281 | 0,344 |
| **Kesimpulan** | Jelek | Cukup | Cukup | Jelek | Cukup | Cukup | Cukup | Cukup | Cukup | Cukup |

**Klasifikasi Daya Pembeda**

|  |  |
| --- | --- |
| **DB** | **Kategori** |
| DB > 0,70 | Baik sekali |
| 0,40 0,69 | Baik |
| 0,20 0,39 | Cukup |
| 0,00 0,19 | Jelek |
| DB < 0,00 | Jelek sekali |

**HASIL PERHITUNGAN DAYA BEDA SOAL**

Rumus untuk menentukan daya pembeda tiap item instrumen penelitian adalah sebagai berikut:

dan

Keterangan:

*DB* : Daya beda

*PT* : Proporsi kelompok tinggi

*PR* : Proporsi kelompok rendah

*PA* : Jumlah jawaban benar pada kelompok atas

*PB* : Jumlah jawaban benar pada kelompok bawah

*JA* : Jumlah skor ideal kelompok atas pada butir soal yang terpilih

*JB* : Jumlah skor ideal kelompok baawah pada butir soal yang terpilih

**TABEL DAYA PEMBEDA BUTIR SOAL**

|  |  |  |
| --- | --- | --- |
| **No Item** | **Daya Pembeda (DP) Butir Tes** | **Keterangan** |
| 1 | 0,625 - 0,656 = -0,031 | Jelek |
| 2 | 0,844 - 0,641 = 0,203 | Cukup |
| 3 | 0,719 - 0,500 = 0,219 | Cukup |
| 4 | 0,672 - 0,531 = 0,141 | Jelek |
| 5 | 0,641 - 375 = 0,266 | Cukup |
| 6 | 0,750 - 0,453 = 0,297 | Cukup |
| 7 | 0,797 - 0,453 = 0,344 | Cukup |
| 8 | 0,828 - 0,438 = 0,391 | Cukup |
| 9 | 0,719 - 0,438 = 0,281 | Cukup |
| 10 | 0,859 - 0,516 = 0,344 | Cukup |

**4. Reliabilitas**

**RELIABILITAS SOAL TES KEMAMPUAN KOMUNIKASI MATEMATIS**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | |
| **2** | **3** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Aisyah Nagita Putri | 3 | 1 | 2 | 4 | 3 | 2 | 1 | 1 | 17 |
| 2 | Al Kautsar Diniantama | 4 | 3 | 3 | 3 | 2 | 4 | 3 | 4 | 26 |
| 3 | Alifta Dara Dinanti | 4 | 2 | 3 | 2 | 1 | 2 | 4 | 1 | 19 |
| 4 | Alisha Shafia Al Raudha | 3 | 1 | 4 | 3 | 3 | 4 | 2 | 3 | 23 |
| 5 | Alvis Sunggu Aritonang | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 0 | 10 |
| 6 | Amar Fadilah | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 1 | 7 |
| 7 | Angelina Ayu Putri Rahmadani | 4 | 2 | 2 | 0 | 1 | 2 | 3 | 4 | 18 |
| 8 | Aqila Zayyan Salsabil | 2 | 2 | 3 | 2 | 1 | 2 | 3 | 3 | 18 |
| 9 | Azril Tri Zaputra | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 7 |
| 10 | Carisa Saharani | 2 | 3 | 1 | 4 | 2 | 0 | 0 | 2 | 14 |
| 11 | Dhean Rayandha | 3 | 2 | 0 | 2 | 4 | 3 | 2 | 1 | 17 |
| 12 | Dimas Duta | 0 | 0 | 3 | 2 | 0 | 1 | 2 | 1 | 9 |
| 13 | Habib Burrohman | 4 | 0 | 1 | 0 | 2 | 3 | 2 | 2 | 14 |
| 14 | Hafizd Nazzarallah Arroyan | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 2 | 26 |
| 15 | Hani Qurrota'aini | 3 | 3 | 2 | 4 | 2 | 3 | 0 | 3 | 20 |
| 16 | Intan Mauli Febrianti | 4 | 4 | 0 | 3 | 2 | 3 | 3 | 2 | 21 |
| 17 | Iqbal Dwi Ainun Jannah | 4 | 1 | 1 | 2 | 2 | 2 | 1 | 4 | 17 |
| 18 | Jhon Fernando | 4 | 2 | 0 | 3 | 4 | 3 | 2 | 4 | 22 |
| 19 | Kanastren Ajeng Pembayun | 2 | 4 | 4 | 3 | 4 | 2 | 4 | 4 | 27 |
| 20 | M. Bintang Perkasa S | 3 | 4 | 3 | 4 | 2 | 0 | 1 | 4 | 21 |
| 21 | M. Farrel Pauleva | 3 | 4 | 2 | 4 | 4 | 3 | 2 | 4 | 26 |
| 22 | M. Fathan Yuriansyah Ramadhan | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 27 |
| 23 | Manja Anisya | 4 | 3 | 1 | 1 | 1 | 3 | 2 | 3 | 18 |
| 24 | Nazla Ghina Censia | 3 | 1 | 2 | 4 | 3 | 4 | 3 | 4 | 24 |
| 25 | Paradhita Ariani | 3 | 3 | 3 | 2 | 4 | 1 | 0 | 3 | 19 |
| 26 | Reza Aulia Resti | 4 | 3 | 2 | 1 | 1 | 3 | 4 | 3 | 21 |
| 27 | Riska Febri Oca | 4 | 2 | 4 | 4 | 3 | 4 | 4 | 4 | 29 |
| 28 | Surya Prayoga | 4 | 4 | 1 | 1 | 4 | 4 | 3 | 4 | 25 |
| 29 | Taqiya Abyan Halza | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 4 | 29 |
| 30 | Teja Rahmawan Pubi Putra | 4 | 2 | 3 | 4 | 3 | 2 | 4 | 3 | 25 |
| 31 | Tika Sari Angraini | 3 | 4 | 1 | 2 | 3 | 3 | 4 | 2 | 22 |
| 32 | Yunitha Lestari Anggraini | 3 | 2 | 2 | 1 | 4 | 4 | 2 | 4 | 22 |
| **Jumlah** | | **97** | **78** | **65** | **77** | **80** | **81** | **74** | **88** | **640** |
| **Varians Butir ke-i** | | **1,193** | **1,480** | **1,773** | **1,991** | **1,484** | **1,354** | **1,641** | **1,548** |  |
| **Jumlah Varianse Butir ke-i** | | **12,464** |  |  |  |  |  |  |  |  |
| **Varians skor total** | | **36,452** |  |  |  |  |  |  |  |  |
| **Koefisien Reliabilitas** | | **0,752** |  |  |  |  |  |  |  |  |

**PERHITUNGAN UJI RELIABILITAS**

**TES KEMAMPUAN KOMUNIKASI MATEMATIS**

Perhitungan uji reliabilitas dengan menggunakan teknik *Alpha Cronbach*, yaitu:

Keterangan:

*r*11 : koefesien reliabilitas tes

*n* : banyaknya butir item yang digunakan

1 : bilangan konstan

*St2*  : varian skor total



: jumlah varian skor dari tiap-tiap butir item



Rumus untuk menentukan nilai varians dari skor total dan varians tiap butir soal yaitu:

Rumus menentukan nilai varians total yaitu:

Keterangan:

*X* : nilai skor yang dipilih

*N* : jumlah item

Perhitungan:

n = 8

= 12,106

=

Dalam pemberian interprestasi terhadap koefesien reliabilitas tes pada umumnya digunakan patokan sebagai berikut:

1. Apabila *r*11 sama dengan atau lebih besar dari pada 0,7 berarti tes hasil belajar yang sedang diuji reliabilitasnya dinyatakan telah memiliki reliabilitas yang tinggi (*reliable*).
2. Apabila *r*11 lebih kecil dari pada 0,7 berarti tes hasil belajar yang sedang diuji reliabilitasnya dinyatakan belum memiliki reliabilitas yang tinggi (*un-reliable*)

Dari perhitungan diperoleh *rhitung* = 0,752 sehingga 0,752 0,7, yang berarti bahwa soal-soal tersebut reliabil.

**LAMPIRAN PERHITUNGAN TES *NUMBER SMART***

**1. Validitas**

**DAFTAR HASIL UJI INSTRUMEN TES**

***NUMBER SMART* (KECERDASAN LOGIS MATEMATIS)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Adelia Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 2 | Ahsyan Alqani | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 26 |
| 3 | Akbar Rama Danu | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 29 |
| 4 | Alena Muatiya | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 2 | 3 | 23 |
| 5 | Alif Irfan Wiryawan | 3 | 3 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 3 | 20 |
| 6 | Anggun Noviyani | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 0 | 3 | 23 |
| 7 | Chintia Nafisa | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 3 | 2 | 0 | 21 |
| 8 | Diah Puspita Sari | 0 | 2 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 3 | 17 |
| 9 | Dika Ardiyansyah | 0 | 2 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 3 | 21 |
| 10 | Dipo Putra Utama | 3 | 0 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 22 |
| 11 | Farhan Dwiki Saputra | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 3 | 24 |
| 12 | Fatimah HasnaKhofifah | 3 | 3 | 2 | 1 | 0 | 1 | 2 | 2 | 0 | 3 | 17 |
| 13 | Febri Dwi Yanti | 3 | 2 | 1 | 3 | 2 | 0 | 2 | 3 | 3 | 3 | 22 |
| 14 | Gilang Romadhon | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 26 |
| 15 | Ilham Saputra | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 25 |
| 16 | Indira Gandy | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 0 | 24 |
| 17 | Jalu Duwi Setiyoko | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 27 |
| 18 | M. Satrio KresnaSaputra | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 3 | 2 | 3 | 19 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 25 |
| 20 | Muhammad Doratul Khusni | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 26 |
| 21 | Muhammad Fazri | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 0 | 0 | 2 | 18 |
| 22 | Muhammad Habibi Pratama | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 25 |
| 23 | Muhammad Ichwan | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 28 |
| 24 | Naja Evan Dika | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 11 |
| 25 | Nur Fadillah | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 26 | Ocha Atha Ramadhania | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 3 | 23 |
| 27 | Ramadhoni Kurniawan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 28 | Reiha Eisya Ramadhani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 3 | 26 |
| 29 | Riris Fibriani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 28 |
| 30 | SartikaAulia Putri | 3 | 3 | 3 | 2 | 0 | 1 | 2 | 3 | 0 | 0 | 17 |
| 31 | Syifa Say Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 29 |
| 32 | Ulfa Dwi Nurhaya | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 28 |
| **Jumlah** | | 80 | 85 | 81 | 77 | 62 | 72 | 81 | 64 | 60 | 78 | 740 |
| **Rhitung** | | 0,579 | 0,350 | 0,225 | 0,691 | 0,579 | 0,741 | 0,569 | 0,358 | 0,593 | 0,567 |  |
| **Rtabel** | | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 | 0,349 |  |
| **Kesimpulan** | | valid | valid | tidak valid | valid | valid | valid | valid | valid | valid | valid |  |

**PERHITUNGAN UJI VALIDITAS BUTIR TES *NUMBER SMART* (KECERDASAN LOGIS MATEMATIS)**

Rumus yang digunakan:

*xi* : nilai jawaban responden pada butir soal ke-*i*

*yi* : nilai total responden ke-*i*

*rxy* : nilai koefisien korelasi pada butir soal ke-*i* sebelum dikoreksi

*n*  : jumlah peserta tes

Berikut ini salah satu contoh untuk butir no. 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **X1** | **XI^2** | **Y** | **Y^2** | **X1Y** |
| 1 | Adelia Putri | 3 | 9 | 30 | 900 | 90 |
| 2 | Ahsyan Alqani | 3 | 9 | 26 | 676 | 78 |
| 3 | Akbar Rama Danu | 3 | 9 | 29 | 841 | 87 |
| 4 | Alena Muatiya | 3 | 9 | 23 | 529 | 69 |
| 5 | Alif Irfan Wiryawan | 3 | 9 | 20 | 400 | 60 |
| 6 | Anggun Noviyani | 3 | 9 | 23 | 529 | 69 |
| 7 | Chintia Nafisa | 2 | 4 | 21 | 441 | 42 |
| 8 | Diah Puspita Sari | 0 | 0 | 17 | 289 | 0 |
| 9 | Dika Ardiyansyah | 0 | 0 | 21 | 441 | 0 |
| 10 | Dipo Putra Utama | 3 | 9 | 22 | 484 | 66 |
| 11 | Farhan Dwiki Saputra | 2 | 4 | 24 | 576 | 48 |
| 12 | Fatimah HasnaKhofifah | 3 | 9 | 17 | 289 | 51 |
| 13 | Febri Dwi Yanti | 3 | 9 | 22 | 484 | 66 |
| 14 | Gilang Romadhon | 3 | 9 | 26 | 676 | 78 |
| 15 | Ilham Saputra | 3 | 9 | 25 | 625 | 75 |
| 16 | Indira Gandy | 3 | 9 | 24 | 576 | 72 |
| 17 | Jalu Duwi Setiyoko | 3 | 9 | 27 | 729 | 81 |
| 18 | M. Satrio KresnaSaputra | 2 | 4 | 19 | 361 | 38 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 4 | 25 | 625 | 50 |
| 20 | Muhammad Doratul Khusni | 3 | 9 | 26 | 676 | 78 |
| 21 | Muhammad Fazri | 2 | 4 | 18 | 324 | 36 |
| 22 | Muhammad Habibi Pratama | 3 | 9 | 25 | 625 | 75 |
| 23 | Muhammad Ichwan | 3 | 9 | 28 | 784 | 84 |
| 24 | Naja Evan Dika | 0 | 0 | 11 | 121 | 0 |
| 25 | Nur Fadillah | 2 | 4 | 10 | 100 | 20 |
| 26 | Ocha Atha Ramadhania | 2 | 4 | 23 | 529 | 46 |
| 27 | Ramadhoni Kurniawan | 3 | 9 | 30 | 900 | 90 |
| 28 | Reiha Eisya Ramadhani | 3 | 9 | 26 | 676 | 78 |
| 29 | Riris Fibriani | 3 | 9 | 28 | 784 | 84 |
| 30 | SartikaAulia Putri | 3 | 9 | 17 | 289 | 51 |
| 31 | Syifa Say Putri | 3 | 9 | 29 | 841 | 87 |
| 32 | Ulfa Dwi Nurhaya | 3 | 9 | 28 | 784 | 84 |
| **Jumlah** | | **80** | **226** | **740** | **17904** | **1933** |

Perhitungan:

Karena telah ditetapkan bahwa butir soal dikatakan valid jika memiliki rhitung > rtabel. Dengan melihat tabel r product moment n = 32 dengan taraf signifikan 0,05, maka didapat rtabel = 0,349 dan dari perhitungan diperoleh rhitung = 0,579 sehingga 0,579 > 0,349. Maka butir soal no 1 tersebut dikategorikan valid, atau dengan kata lain soal tersebut dapat digunakan.

**2. Tingkat Kesukaran**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Adelia Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 2 | Ahsyan Alqani | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 26 |
| 3 | Akbar Rama Danu | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 29 |
| 4 | Alena Muatiya | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 2 | 3 | 23 |
| 5 | Aif Irfan Wiryawan | 3 | 3 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 3 | 20 |
| 6 | Anggun Noviyani | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 0 | 3 | 23 |
| 7 | Chintia Nafisa | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 3 | 2 | 0 | 21 |
| 8 | Diah Puspita Sari | 0 | 2 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 3 | 17 |
| 9 | Dika Ardiyansyah | 0 | 2 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 3 | 21 |
| 10 | Dipo Putra Utama | 3 | 0 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 22 |
| 11 | Farhan Dwiki Saputra | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 3 | 24 |
| 12 | Fatimah HasnaKhofifah | 3 | 3 | 2 | 1 | 0 | 1 | 2 | 2 | 0 | 3 | 17 |
| 13 | Febri Dwi Yanti | 3 | 2 | 1 | 3 | 2 | 0 | 2 | 3 | 3 | 3 | 22 |
| 14 | Gilang Romadhon | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 26 |
| 15 | Ilham Saputra | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 25 |
| 16 | Indira Gandy | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 0 | 24 |
| 17 | Jalu Duwi Setiyoko | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 27 |
| 18 | M. Satrio KresnaSaputra | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 3 | 2 | 3 | 19 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 25 |
| 20 | Muhammad Doratul Khusni | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 26 |
| 21 | Muhammad Fazri | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 0 | 0 | 2 | 18 |
| 22 | Muhammad Habibi Pratama | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 25 |
| 23 | Muhammad Ichwan | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 28 |
| 24 | Naja Evan Dika | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 11 |
| 25 | Nur Fadillah | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 26 | Ocha Atha Ramadhania | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 3 | 23 |
| 27 | Ramadhoni Kurniawan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 28 | Reiha Eisya Ramadhani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 3 | 26 |
| 29 | Riris Fibriani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 28 |
| 30 | SartikaAulia Putri | 3 | 3 | 3 | 2 | 0 | 1 | 2 | 3 | 0 | 0 | 17 |
| 31 | Syifa Say Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 29 |
| 32 | Ulfa Dwi Nurhaya | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 28 |
| **B** | | **80** | **85** | **81** | **77** | **62** | **72** | **81** | **64** | **60** | **78** | **740** |
| **Smi** | | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** | **4** |  |
| **n** | | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** | **32** |  |
| **J** | | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** | **128** |  |
| **I** | | **0,625** | **0,664** | **0,633** | **0,602** | **0,484** | **0,563** | **0,633** | **0,500** | **0,469** | **0,609** |  |
| **Kesimpulan** | | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** | **sedang** |  |

**HASIL PERHITUNGAN TINGKAT KESUKARAN TIAP BUTIR SOAL**

**TES KEMAMPUAN KOMUNIKASI MATEMATIS**

Rumus yang digunakan:

Keterangan:

*I* : Indeks kesukaran tiap butir soal

*B* : Banyaknya siswa yang menjawab benar tiap butir soal

*J* : Banyaknya siswa yang memberikan jawaban pada soal yang

dimaksudkan

|  |  |  |
| --- | --- | --- |
| **No.** | **Angka Indkes Kesukaran Butir Tes** | **Keterangan** |
| 1 | 80/128 | 0,6,25 |
| 2 | 85/128 | 0,664 |
| 3 | 81/128 | 0,633 |
| 4 | 77/128 | 0,602 |
| 5 | 62/128 | 0,484 |
| 6 | 72/128 | 0,563 |
| 7 | 80/128 | 0,633 |
| 8 | 64/128 | 0,500 |
| 9 | 60/128 | 0,469 |
| 10 | 78/128 | 0,609 |

**Tabel**

**Interprestasi Tingkat Kesukaran Butir Tes**

|  |  |
| --- | --- |
| **Indeks Kesukaran** | **Kategori** |
| 0,0 0,3 | Sukar |
| 0,3 0,7 | Sedang |
| 0,7 | Mudah |

**3. Daya Beda**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 1 | Adelia Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 27 | Ramadhoni Kurniawan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 3 | Akbar Rama Danu | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 29 |
| 31 | Syifa Say Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 29 |
| 23 | Muhammad Ichwan | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 28 |
| 29 | Riris Fibriani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 28 |
| 32 | Ulfa Dwi Nurhaya | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 28 |
| 17 | Jalu Duwi Setiyoko | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 27 |
| 2 | Ahsyan Alqani | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 26 |
| 14 | Gilang Romadhon | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 26 |
| 20 | Muhammad Doratul Khusni | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 26 |
| 28 | Reiha Eisya Ramadhani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 3 | 26 |
| 15 | Ilham Saputra | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 25 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 25 |
| 22 | Muhammad Habibi Pratama | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 25 |
| 11 | Farhan Dwiki Saputra | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 3 | 24 |
| 16 | Indira Gandy | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 0 | 24 |
| 4 | Alena Muatiya | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 2 | 3 | 23 |
| 6 | Anggun Noviyani | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 0 | 3 | 23 |
| 26 | Ocha Atha Ramadhania | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 3 | 23 |
| 10 | Dipo Putra Utama | 3 | 0 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 22 |
| 13 | Febri Dwi Yanti | 3 | 2 | 1 | 3 | 2 | 0 | 2 | 3 | 3 | 3 | 22 |
| 7 | Chintia Nafisa | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 3 | 2 | 0 | 21 |
| 9 | Dika Ardiyansyah | 0 | 2 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 3 | 21 |
| 5 | Aif Irfan Wiryawan | 3 | 3 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 3 | 20 |
| 18 | M. Satrio KresnaSaputra | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 3 | 2 | 3 | 19 |
| 21 | Muhammad Fazri | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 0 | 0 | 2 | 18 |
| 30 | SartikaAulia Putri | 3 | 3 | 3 | 2 | 0 | 1 | 2 | 3 | 0 | 0 | 17 |
| 8 | Diah Puspita Sari | 0 | 2 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 3 | 17 |
| 12 | Fatimah HasnaKhofifah | 3 | 3 | 2 | 1 | 0 | 1 | 2 | 2 | 0 | 3 | 17 |
| 25 | Nur Fadillah | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 24 | Naja Evan Dika | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 11 |
| **Jumlah** | | 80 | 85 | 81 | 77 | 62 | 72 | 81 | 64 | 60 | 78 | 740 |

**PERHITUNGAN DAYA BEDA BUTIR SOAL TES**

***NUMBER SMART* (KECERDASAN LOGIS MATEMATIS)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **KELOMPOK ATAS** | | | | | | | | | | **Total** |
| **Hasil Jawaban Siswa** | | | | | | | | | |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |  |
| 1 | Adelia Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 27 | Ramadhoni Kurniawan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 30 |
| 3 | Akbar Rama Danu | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 29 |
| 31 | Syifa Say Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 29 |
| 23 | Muhammad Ichwan | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 28 |
| 29 | Riris Fibriani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 28 |
| 32 | Ulfa Dwi Nurhaya | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 28 |
| 17 | Jalu Duwi Setiyoko | 3 | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 3 | 27 |
| 2 | Ahsyan Alqani | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 26 |
| 14 | Gilang Romadhon | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 26 |
| 20 | Muhammad Doratul Khusni | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 26 |
| 28 | Reiha Eisya Ramadhani | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 3 | 26 |
| 15 | Ilham Saputra | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 3 | 25 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 1 | 3 | 25 |
| 22 | Muhammad Habibi Pratama | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 2 | 25 |
| 11 | Farhan Dwiki Saputra | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 0 | 3 | 24 |
|  | **PA** | 46 | 48 | 43 | 47 | 39 | 46 | 47 | 35 | 35 | 46 | 432 |
|  | **JA** | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |  |
|  | **PT** | 0,958 | 1,000 | 0,896 | 0,979 | 0,813 | 0,958 | 0,979 | 0,729 | 0,729 | 0,958 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **KELOMPOK BAWAH** | | | | | | | | | | **Total** |
| **Hasil Jawaban Siswa** | | | | | | | | | |
| **Butir Soal** | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| 16 | Indira Gandy | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 0 | 24 |
| 4 | Alena Muatiya | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 0 | 2 | 3 | 23 |
| 6 | Anggun Noviyani | 3 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 0 | 3 | 23 |
| 26 | Ocha Atha Ramadhania | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 3 | 3 | 23 |
| 10 | Dipo Putra Utama | 3 | 0 | 3 | 2 | 2 | 1 | 2 | 3 | 3 | 3 | 22 |
| 13 | Febri Dwi Yanti | 3 | 2 | 1 | 3 | 2 | 0 | 2 | 3 | 3 | 3 | 22 |
| 7 | Chintia Nafisa | 2 | 3 | 3 | 3 | 0 | 3 | 2 | 3 | 2 | 0 | 21 |
| 9 | Dika Ardiyansyah | 0 | 2 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 3 | 21 |
| 5 | Aif Irfan Wiryawan | 3 | 3 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 3 | 20 |
| 18 | M. Satrio KresnaSaputra | 2 | 1 | 2 | 0 | 0 | 3 | 3 | 3 | 2 | 3 | 19 |
| 21 | Muhammad Fazri | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 0 | 0 | 2 | 18 |
| 30 | SartikaAulia Putri | 3 | 3 | 3 | 2 | 0 | 1 | 2 | 3 | 0 | 0 | 17 |
| 8 | Diah Puspita Sari | 0 | 2 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 3 | 17 |
| 12 | Fatimah HasnaKhofifah | 3 | 3 | 2 | 1 | 0 | 1 | 2 | 2 | 0 | 3 | 17 |
| 25 | Nur Fadillah | 2 | 3 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 10 |
| 24 | Naja Evan Dika | 0 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 0 | 0 | 11 |
|  | **PB** | 34 | 37 | 38 | 30 | 23 | 26 | 34 | 29 | 25 | 32 | 308 |
|  | **JB** | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |  |
|  | **PR** | 0,708 | 0,771 | 0,792 | 0,625 | 0,479 | 0,542 | 0,708 | 0,604 | 0,521 | 0,667 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Butir Soal** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **DB** | 0,25 | 0,229 | 0,104 | 0,354 | 0,333 | 0,417 | 0,271 | 0,125 | 0,208 | 0,292 |
| **Kesimpulan** | Cukup | Cukup | Jelek | Cukup | Cukup | Baik | Cukup | Jelek | Cukup | Cukup |

**Klasifikasi Daya Pembeda**

|  |  |
| --- | --- |
| **DB** | **Kategori** |
| DB > 0,70 | Baik sekali |
| 0,40 0,69 | Baik |
| 0,20 0,39 | Cukup |
| 0,00 0,19 | Jelek |
| DB < 0,00 | Jelek sekali |

**HASIL PERHITUNGAN DAYA BEDA SOAL**

Rumus untuk menentukan daya pembeda tiap item instrumen penelitian adalah sebagai berikut:

dan

Keterangan:

*DB* : Daya beda

*PT* : Proporsi kelompok tinggi

*PR* : Proporsi kelompok rendah

*PA* : Jumlah jawaban benar pada kelompok atas

*PB* : Jumlah jawaban benar pada kelompok bawah

*JA* : Jumlah skor ideal kelompok atas pada butir soal yang terpilih

*JB*  : Jumlah skor ideal kelompok baawah pada butir soal yang terpilih

**TABEL DAYA PEMBEDA BUTIR SOAL**

|  |  |  |
| --- | --- | --- |
| **No Item** | **Daya Pembeda (DP) Butir Tes** | **Keterangan** |
| 1 | 0,625 - 0,656 = -0,031 | Jelek |
| 2 | 0,844 - 0,641 = 0,203 | Cukup |
| 3 | 0,719 - 0,500 = 0,219 | Cukup |
| 4 | 0,672 - 0,531 = 0,141 | Jelek |
| 5 | 0,641 - 375 = 0,266 | Cukup |
| 6 | 0,750 - 0,453 = 0,297 | Cukup |
| 7 | 0,797 - 0,453 = 0,344 | Cukup |
| 8 | 0,828 - 0,438 = 0,391 | Cukup |
| 9 | 0,719 - 0,438 = 0,281 | Cukup |
| 10 | 0,859 - 0,516 = 0,344 | Cukup |

**4. Reliabilitas**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Nama** | **Hasil Jawaban Siswa** | | | | | | | | **Total** |
| **Butir Soal** | | | | | | | |
| **1** | **2** | **4** | **5** | **6** | **7** | **9** | **10** |
| 1 | Adelia Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 24 |
| 2 | Ahsyan Alqani | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 22 |
| 3 | Akbar Rama Danu | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 23 |
| 4 | Alena Muatiya | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 20 |
| 5 | Aif Irfan Wiryawan | 3 | 3 | 0 | 2 | 2 | 1 | 2 | 3 | 16 |
| 6 | Anggun Noviyani | 3 | 3 | 3 | 3 | 2 | 1 | 0 | 3 | 18 |
| 7 | Chintia Nafisa | 2 | 3 | 3 | 0 | 3 | 2 | 2 | 0 | 15 |
| 8 | Diah Puspita Sari | 0 | 2 | 2 | 1 | 0 | 1 | 3 | 3 | 12 |
| 9 | Dika Ardiyansyah | 0 | 2 | 3 | 1 | 2 | 3 | 2 | 3 | 16 |
| 10 | Dipo Putra Utama | 3 | 0 | 2 | 2 | 1 | 2 | 3 | 3 | 16 |
| 11 | Farhan Dwiki Saputra | 2 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 19 |
| 12 | Fatimah HasnaKhofifah | 3 | 3 | 1 | 0 | 1 | 2 | 0 | 3 | 13 |
| 13 | Febri Dwi Yanti | 3 | 2 | 3 | 2 | 0 | 2 | 3 | 3 | 18 |
| 14 | Gilang Romadhon | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 3 | 21 |
| 15 | Ilham Saputra | 3 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 21 |
| 16 | Indira Gandy | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 0 | 20 |
| 17 | Jalu Duwi Setiyoko | 3 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 21 |
| 18 | M. Satrio KresnaSaputra | 2 | 1 | 0 | 0 | 3 | 3 | 2 | 3 | 14 |
| 19 | Muhammad Atha Dzaki Y. | 2 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 20 |
| 20 | Muhammad Doratul Khusni | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 22 |
| 21 | Muhammad Fazri | 2 | 2 | 2 | 3 | 2 | 2 | 0 | 2 | 15 |
| 22 | Muhammad Habibi Pratama | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 2 | 20 |
| 23 | Muhammad Ichwan | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 23 |
| 24 | Naja Evan Dika | 0 | 2 | 2 | 2 | 1 | 2 | 0 | 0 | 9 |
| 25 | Nur Fadillah | 2 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 7 |
| 26 | Ocha Atha Ramadhania | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 21 |
| 27 | Ramadhoni Kurniawan | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 24 |
| 28 | Reiha Eisya Ramadhani | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 23 |
| 29 | Riris Fibriani | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 23 |
| 30 | SartikaAulia Putri | 3 | 3 | 2 | 0 | 1 | 2 | 0 | 0 | 11 |
| 31 | Syifa Say Putri | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 24 |
| 32 | Ulfa Dwi Nurhaya | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 24 |
| **Jumlah** | | **80** | **85** | **77** | **62** | **72** | **81** | **60** | **78** | **595** |
| **Varians Butir ke-i** | | **0,839** | **0,491** | **0,894** | **1,222** | **1,032** | **0,451** | **1,468** | **1,222** |  |
| **Jumlah Varianse Butir ke-i** | | **7,618** |  |  |  |  |  |  |  |  |
| **Varians skor total** | | **21,797** |  |  |  |  |  |  |  |  |
| **Koefisien Reliabilitas** | | **0,743** |  |  |  |  |  |  |  |  |

**PERHITUNGAN UJI RELIABILITAS**

**TES *NUMBER SMART* (KECERDASAN LOGIS MATEMATIS)**

Perhitungan uji reliabilitas dengan menggunakan teknik *Alpha Cronbach*, yaitu:

Keterangan:

*r*11 : koefesien reliabilitas tes

*n* : banyaknya butir item yang digunakan

1 : bilangan konstan

*St2*  : varian skor total



: jumlah varian skor dari tiap-tiap butir item



Rumus untuk menentukan nilai varians dari skor total dan varians tiap butir soal yaitu:

Rumus menentukan nilai varians total yaitu:

Keterangan:

*X* : nilai skor yang dipilih

*N* : jumlah item

Perhitungan:

n = 8

= 7,618

= 21,797

Dalam pemberian interprestasi terhadap koefesien reliabilitas tes pada umumnya digunakan patokan sebagai berikut:

1. Apabila *r*11 sama dengan atau lebih besar dari pada 0,7 berarti tes hasil belajar yang sedang diuji reliabilitasnya dinyatakan telah memiliki reliabilitas yang tinggi (*reliable*).
2. Apabila *r*11 lebih kecil dari pada 0,7 berarti tes hasil belajar yang sedang diuji reliabilitasnya dinyatakan belum memiliki reliabilitas yang tinggi (*un-reliable*)

Dari perhitungan diperoleh *rhitung* = 0,743 sehingga 0,743 0,7, yang berarti bahwa soal-soal tersebut reliabil.