Laboratorijska vaja FIZIKA

Gibanje

Vaja 5

**Gibanje**

**Vodoravni in poševni met**

Naloga:

* Izpiši in izpelji formule za:
* Vodoravni met(s,vk,v1,v2,v3)
* Sunek sile in gibalno količino(F,dt,m,v)
* Poševni met(s,vk,v1,v2,v3,h)
* Poševni met z višine(s,vk,v1,v2,v3,h)

Pri izpeljavah so obvezne skice!

* Izmeri hitrost izstrelka, če ga izstrelimo vodoravno in merimo domet topiča!
* Izračunaj pospešek izstrelka v topiču!
* Izračunaj silo s katero topič požene izstrelek!
* Ugotovi odvisnost dometa topiča od naklona! Nariši graf s=s(α)
* Ugotovi odvisnost dometa topiča pri poševnem metu z višine! Nariši graf s=s(α)

Potrebščine:

* Topič na stojalu
* Tehtnica
* Meter
* Pomično merilo
* Kotomer

Navodilo:

Ugotovi kaj vse je potrebno izmeriti in nariši primerne tabele. Meritve opravi za izstrelka.

**Izpiši in izpelji formule za:**

Vodoravni met













Sunek sile in gibalno količino









Poševni met

















**Vodoravni in poševni met z višine (valj):**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| α[°] | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 1 | 71 | 75 | 80 | 82 | 79 | 71 | 59 | 39 | 12 |
| 2 | 71 | 79 | 82 | 86 | 82 | 73 | 62 | 36 | 12 |
| 3 | 72 | 84 | 85 | 84 | 84 | 71 | 57 | 38 | 15 |
| 4 | 72 | 77 | 81 | 84 | 80 | 70 | 58 | 38 | 11 |
| 5 | 72 | 81 | 81 | 86 | 83 | 72 | 56 | 38 | 12 |
| 6 | 72 | 80 | 82 | 84 | 80 | 70 | 59 | 36 | 15 |
| 7 | 71 | 82 | 82 | 86 | 80 | 72 | 60 | 39 | 17 |
| 8 | 74 | 82 | 81 | 82 | 79 | 72 | 61 | 38 | 10 |
| povp.: | 72 | 80 | 82 | 84 | 81 | 71 | 59 | 38 | 13 |
| abs.n.: | 0,8 | 2,8 | 1,4 | 1,7 | 1,9 | 1,1 | 2,1 | 1,2 | 2,4 |

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**Poševni met z mize (valj):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| α[°] | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 1 | 14 | 18 | 31 | 41 | 39 | 34 | 28 | 15 |
| 2 | 15 | 19 | 30 | 40 | 40 | 34 | 26 | 16 |
| 3 | 16 | 18 | 32 | 39 | 44 | 33 | 23 | 16 |
| 4 | 14 | 18 | 29 | 41 | 39 | 30 | 29 | 14 |
| 5 | 14 | 19 | 30 | 41 | 40 | 36 | 26 | 14 |
| 6 | 16 | 20 | 33 | 43 | 40 | 36 | 23 | 15 |
| 7 | 14 | 17 | 31 | 44 | 42 | 34 | 24 | 14 |
| 8 | 15 | 18 | 30 | 39 | 39 | 34 | 26 | 15 |
| povp.: | 15 | 18 | 31 | 41 | 40 | 34 | 26 | 15 |
| abs.n.: | 0,9 | 0,9 | 1,3 | 1,8 | 1,8 | 1,9 | 2,2 | 0,8 |

**Vodoravni in poševni met z višine (kroglica):**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| α[°] | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 1 | 130 | 144 | 157 | 149 | 143 | 116 | 94 | 50 | 19 |
| 2 | 133 | 145 | 156 | 147 | 145 | 113 | 94 | 48 | 15 |
| 3 | 134 | 146 | 158 | 148 | 145 | 115 | 95 | 54 | 17 |
| 4 | 131 | 143 | 154 | 147 | 143 | 115 | 96 | 51 | 19 |
| 5 | 132 | 142 | 157 | 149 | 144 | 114 | 94 | 52 | 20 |
| 6 | 132 | 141 | 157 | 147 | 144 | 116 | 94 | 48 | 18 |
| 7 | 131 | 145 | 156 | 147 | 143 | 117 | 93 | 49 | 19 |
| 8 | 135 | 145 | 156 | 149 | 145 | 118 | 94 | 49 | 17 |
| povp.: | 132 | 144 | 156 | 148 | 144 | 116 | 94 | 50 | 18 |
| abs.n.: | 1,7 | 1,7 | 1,2 | 1,0 | 0,9 | 1,6 | 0,9 | 2,1 | 1,6 |









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**Poševni met z mize (kroglica):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| α[°] | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |
| 1 | 32 | 57 | 86 | 94 | 84 | 63 | 34 | 27 |
| 2 | 34 | 57 | 84 | 98 | 88 | 63 | 34 | 24 |
| 3 | 31 | 56 | 84 | 94 | 88 | 63 | 31 | 25 |
| 4 | 32 | 58 | 85 | 94 | 89 | 67 | 34 | 25 |
| 5 | 34 | 54 | 88 | 95 | 85 | 68 | 35 | 24 |
| 6 | 33 | 55 | 83 | 96 | 86 | 64 | 35 | 23 |
| 7 | 34 | 56 | 83 | 94 | 87 | 64 | 34 | 23 |
| 8 | 33 | 57 | 85 | 93 | 89 | 65 | 31 | 26 |
| povp.: | 33 | 56 | 85 | 95 | 87 | 65 | 34 | 25 |
| abs.n: | 1,1 | 1,3 | 1,7 | 1,6 | 1,9 | 1,9 | 1,6 | 1,4 |

