Navpični in poševni met

1. MERITVE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Navpični met**

|  |  |
| --- | --- |
| n | t [s] |
| 1 | 2,52 |
| 2 | 2,37 |
| 3 | ~~2,61~~ |
| 4 | ~~2,32~~ |
| 5 | 2,43 |
| 6 | 2,53 |

 | Poševni met

|  |  |  |
| --- | --- | --- |
| n | t [s] | s [m] |
| 1 | 1,27 | 10,2 |
| 2 | 1,28 | 10,1 |
| 3 | ~~1,18~~ | ~~9,4~~ |
| 4 | ~~1,39~~ | ~~9,8~~ |
| 5 | ~~1,18~~ | ~~10,4~~ |
| 6 | 1,21 | 10,3 |

 |
| ‾t = 2,46 sAbsolutna napaka

|  |  |
| --- | --- |
| n | Δt [s] |
| 1 | 0,06 |
| 2 | 0,09 |
| 3 | ~~0,15~~ |
| 4 | ~~0,14~~ |
| 5 | 0,03 |
| 6 | 0,07 |

Δt = 0,0625 s‾t = 2,46 s ± 0,062 s= 2,46 ( 1 ± 0,025 ) s | ‾t = 1,25 s‾s = 10,2 mAbsolutna napaka

|  |  |  |
| --- | --- | --- |
| n | Δt [s] | Δs [m] |
| 1 | 0,02 | 0,0 |
| 2 | 0,03 | 0,1 |
| 3 | ~~0,07~~ | ~~0,8~~ |
| 4 | ~~0,14~~ | ~~0,4~~ |
| 5 | ~~0,07~~ | ~~0,2~~ |
| 6 | 0,04 | 0,1 |

Δt = 0,03 sΔs = 0,06 m‾t = 1,25 s ± 0,03 s = 1,25 ( 1 ± 0,024 ) s‾s = 10,2 m ± 0,06 m = 10,2 ( 1 ± 0,005) m |

1. IZRAČUNI

|  |  |
| --- | --- |
| a.) Kolikšno višino doseže kamen?a = 9,81 m/s2t1 = t / 2t1 = 2,46 s / 2 = 1,23 sh = Vs • t1Vs = V0 / 2 = a • t1 / 2h = ( a • t12 ) / 2h = ( 9,81 m/s2 • 1,51 s2 ) / 2 = 7,4 mb.) S kolikšno začetno hitrostjo je bil zalučan kamen?a = 9,81 m/s2 t1 = t / 2t1 = 2,46 s / 2 = 1,23 sV0 = a • t1V0 = 9,81 m/s2 • 1,23 s = 12,06 m/s**c.) Katere sile so delovale na kamen?**Ko smo kamen zalučali v zrak, so na kamen delovale sila roke, gravitacijska sila in sila upora, ki pa je zanemarljiva. Na silo roke je stalno deloval pojemek in po približno 7,4 m sta se sila roke in gravitacijska sila izničila. Kamen je začel padati. Takrat so nanj delovale samo gravitacijska sila in sila upora, ki pa je ponovno zanemarljiv. | **a.) Kako bi izmeril začetno hitrost kamna?****-če imaš samo štoparico**V0 • sin(α) = ( g • t ) / 2V0 = ( g • t ) / 2sin(α)V0 = ( 9,81 m/s2 • 1,25 s ) / 0,707V0 = 17,34 m/s**-če imaš samo merilni trak**D = V02 • sin (2α) / gV02 = ( D • g ) / sin(90)V02 = ( 10,2 m • 9,81 m/s2 ) / 1V02 = 100,062 m2/s2V0 = √100,062 = 10,003 m/sb.) Kakšno največjo višino je dosegel kamen?h = ( V0 • sin(α) ) / 2gh = ( 100,062 m/s • 0,707 ) / 2 • 9,81 m/s2h = 3,6 mc.) Katere sile so delovale na kamen?Na kamen so delovale sile roke in gravitacijska sila. Silo roke, ki gre pod kotom 45° lahko razbijemo na x in y silo. Sila x botruje temu da kamen zalučamo na določeno razdaljo, sila y pa se ščasoma izenači z gravitacijsko silo, zato začne kamen padati. |