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 s Absolutna 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 m Absolutna 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 s  Δs = 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

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| a.) Kolikšno višino doseže kamen?  a = 9,81 m/s2  t1 = t / 2  t1 = 2,46 s / 2 = 1,23 s  h = Vs • t1  Vs = V0 / 2 = a • t1 / 2  h = ( a • t12 ) / 2  h = ( 9,81 m/s2 • 1,51 s2 ) / 2 = 7,4 m  b.) S kolikšno začetno hitrostjo je bil zalučan kamen?  a = 9,81 m/s2  t1 = t / 2  t1 = 2,46 s / 2 = 1,23 s  V0 = a • t1  V0 = 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 ) / 2  V0 = ( g • t ) / 2sin(α)  V0 = ( 9,81 m/s2 • 1,25 s ) / 0,707  V0 = 17,34 m/s  **-če imaš samo merilni trak**  D = V02 • sin (2α) / g  V02 = ( D • g ) / sin(90)  V02 = ( 10,2 m • 9,81 m/s2 ) / 1  V02 = 100,062 m2/s2  V0 = √100,062 = 10,003 m/s  b.) Kakšno največjo višino je dosegel kamen?  h = ( V0 • sin(α) ) / 2g  h = ( 100,062 m/s • 0,707 ) / 2 • 9,81 m/s2  h = 3,6 m  c.) 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. |