**RJEŠENJA:**

**1. Zadatak :**

1. **51 km/h = 51 / 3.6 m/s = 14.16 m/s**
2. **62 m/s = 62 x 3.6 km/h = 223.2 km/h**
3. **56 m/s = 56 x 3.6 km/h = 201.6 km/h**
4. **73 km/h = 73 / 3.6 m/s = 20.27 m/s**
5. **94 km/h = 94 / 3.6 m/s = 26.11 m/s**
6. **43 m/s = 43 x 3.6 km/h = 154.8 km/h**

**2. v = 20 m/s**

 **t = 3.5 h = 12 600 s**

 **s =?**

**s= v x t**

**s = 20 m/s x 12 600 s**

**s = 252 000 m = 252 km**

**3. v = 0.8 m/s**

 **s = 450 km = 450 000 m**

 **t = ?**

**t = s / v**

**t = 450 000 m / 0.8 m/s**

**t = 562 500 s = 156.25 h**

**4. v = 30 km/h**

 **t = 1 dan = 24 h**

 **s = ?**

**s = v x t**

**s = 30 km/h x 24 h**

**s = 720 km**

**5. t = 1 h 20 min = 1.33 h**

 **s = 8 400 km**

 **v = ?**

**v = s/t**

**v = 8 400 km / 1.33 h**

**v = 6315.7894 km/h = 1754.3859 m/s**

**6. s = 3 m**

 **v = 340 m/s**

 **t = ?**

**t = s / v**

**t = 3 m / 340 m/s**

**t = 0.0088 s**

**7. v = 90 km/h**

 **s = 250 km**

 **t = ?**

**t = s / t**

**t = 250 km / 90km/h**

 **t = 2.77 h**

**8. a) od A do B tijelo se gibalo jednoliko ubrzano ravnocrtno, od B do C jednoliko**

 **ravnocrtno, a od C do D jednoliko usporeno ravnocrtno**

 **b) su = s1+s2+s3**

 **su = v1 x t1 / 2+ v2 x t2 + v3 x t3 / 2**

 **su = 40 m/s x 2 s / 2 + 40 m/s x 4 s + 40 m/s x 2 s / 2**

 **su = 40 m + 160 m + 40 m**

 **su = 240 m**

 **c) a1 = Δv1 /Δt1**

**a1 = v1 – v0 / t1 – t0**

 **a1 = 40 m/s – 0 m/s / 2 s – 0 s**

 **a1 = 40 m/s / 2 s**

 **a1 = 20 m/s2**

 **a2 = Δv2 /Δt2**

**a2 = v2 – v1 / t2 – t1**

 **a2 = 40 m/s – 40 m/s / 6 s – 2 s**

 **a2 = 0 m/s / 4 s**

 **a2 = 0 m/s2**

 **a3 = Δv3 /Δt3**

**a3 = v3 – v2 / t3 – t2**

 **a3 = 0 m/s – 40 m/s / 8 s – 6 s**

 **a3 = - 40 m/s / 2 s**

 **a3 = -20 m/s2**

|  |  |  |  |
| --- | --- | --- | --- |
| **a / m/s2** | **20** | **0** | **-20** |
| **t / s** | **2** | **6** | **8** |

 **a – t grafikon**

**a /m/s2**

 **20**

 **10**

 **- 10**

 **- 20**

 **2 4 6 8 t / s**

 **A B**

 **B C**

 **C D**

**9. a) Od A do B tijelo se giba jednoliko ravnocrtno, od B do C miruje, a od C do**

 **ponovno jednoliko ravnocrtno.**

 **b) v1 = Δs1/Δt1**

 **v1 = s1 – s0 / t1 – t0**

 **v1 = 30 km – 0 m/s / 0.3 h – 0 h**

 **v1 = 30 km / 0.3 h**

 **v1 = 100 km/h**

 **v2 = Δs2/Δt2**

 **v2 = s2 – s1 / t2 – t1**

 **v2 = 30 km – 30 km / 0.5 h – 0.3 h**

 **v2 = 0 km / 0.2 h**

 **v2 = 0 km/h**

 **v3 = Δs3/Δt3**

 **v3 = s3 – s2 / t3 – t2**

**v3 = 50 km – 30 km / 1 h – 0.5 h**

 **v3 = 20 km / 0.5 h**

 **v3 = 40 km/h**

|  |  |  |  |
| --- | --- | --- | --- |
| **v/km/h** | **100** | **0** | **40** |
| **t/h** | **0.3** | **0.5** | **1** |

 **c)**

**v/km/h**

 **120**

 **80**

 **40**

 **v – t grafikon**

**A B**

 **C D**

 **B C**

 **0.3 0.5 1 t/h**

**10. a) Od A do B tijelo miruje, od B do C tijelo se giba jednoliko ravnocrtno, od C**

 **do D tijelo ponovno miruje, a od D do E tijelo se giba jednoliko ravnocrtno.**

 **b) v1 = Δs1/Δt1**

 **v1 = s1 – s0 / t1 – t0**

 **v1 = 0 m – 0 m / 2 s – 0 s**

 **v1 = 0 m/s**

 **v2 = Δs2/Δt2**

 **v2 = s2 – s1 / t2 – t1**

 **v2 = 50 m – 0 m / 6 s – 2 s**

 **v2 = 50 m / 4 s**

 **v2 = 12.5 m/s**

 **v3 = Δs3/Δt3**

 **v3 = s3 – s2 / t3 – t2**

 **v3 = 50 m – 50 m / 8 s – 6 s**

 **v3 = 0 m / 4 s**

 **v3 = 0 m/s**

 **v4= Δs4/Δt4**

 **v4 = s4 – s3 / t4 – t3**

**v4 = 80 m – 50 m / 11 s – 8 s**

 **v4 = 30 m / 3 s**

 **v4 = 10 m/s**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **v / m/s** | **0** | **12.5** | **0** | **10** |
| **t/s** | **2** | **6** | **8** | **11** |

 **v – t grafikon**

 **v / m/s**

 **14**

**12**

**10**

**8**

**6**

**4**

**2**

**2 4 6 8 10 12 t/s**

**A B**

 **B C**

**C D**

**D E**

 **c) su = 80 m**

**11. a) Od A do B tijelo miruje, od B do C giba se jednoliko ubrzano, a od C do D**

 **jednoliko ravnocrtno.**

 **b) su = s1 + s2 + s3**

**su = v1 x t1 + v2 x t2 / 2 + v3 x t3**

 **su = 0 m/s x 2 s + 60 m/s x 4 s / 2 + 60 m/s x 4 s**

 **su = 0 m + 120 m + 240 m**

 **su = 360 m**

 **c) a1 = Δv1/Δt1**

**a1 = v1 - v0 / t1 – t0**

 **a1 = 0 m/s – 0 m/s / 2s – 0 s**

 **a1 = 0 m/s / 2 s**

 **a1 = 0 m/s2**

 **a2 = Δv2/Δt2**

**a2 = v2 - v1 / t2 – t1**

**a2 = 60 m/s – 0 m/s / 6 s – 2 s**

 **a2 = 60 m/s / 4 s**

 **a2 = 15 m/s2**

 **a3 = Δv3/Δt3**

**a3 = v3 – v2 / t3 – t2**

 **a3 = 60 m/s – 60 m/s / 10 s – 6 s**

 **a3 = 0 m/s / 4 s**

 **a3 = 0 m/s2**

**12. a) Od A do B tijelo se giba jednoliko ubrzano ravnocrtno, od B do C jednoliko**

 **ravnocrtno i od C do D jednoliko ubrzano.**

 **b) su = s1 + s2 + s3**

**su = v1 x t1/ 2 + v2 x t2  + v3 x t3 /2**

 **su = 40 m/s x 4 s / 2 + 40 m/s x 6 s + 40 m/s x 2 s / 2**

 **su = 40 m + 240 m + 40 m**

 **su = 360 m**

 **c) a1 = Δv1/Δt1**

**a1 = v1 - v0 / t1 – t0**

**a1 = 40 m/s – 0 m/s / 4 s – 0 s**

 **a1 = 40 m/s / 4 s**

 **a1 = 10 m/s2**

 **a2 = Δv2/Δt2**

**a2 = v2 - v1 / t2 – t1**

**a2 = 40 m/s – 40 m/s / 10 s – 4 s**

 **a2 = 0 m/s / 6 s**

 **a2 = 0 m/s2**

 **a3 = Δv3/Δt3**

**a3 = v3 – v2 / t3 – t2**

**a3 = 80 m/s – 40 m/s / 12 s – 10 s**

 **a3 = 40 m/s / 2 s**

 **a3 = 20 m/s2**

**13. a) Od A do B tijelo se gibalo jednoliko ravnocrtno, od B do C miruje, a od C**

 **do D jednoliko ravnocrtno.**

 **b) Tijelo je ukupno prevalilo put od 80 m.**

 **c) Tijelo se giba jednoliko ravnocrtno pa nema akceleracije.**

 **v1 = Δs1/Δt1**

 **v1 = s1 – s0 / t1 – t0**

**v1 = 50 m +0 m / 2 s – 0 s**

 **v1 = 50 m / 2 s**

 **v1 = 25 m/s**

 **v2 = Δs2/Δt2**

 **v2 = s2 – s1 / t2 – t1**

 **v2 = 50 m – 50 m / 8 s – 2 s**

 **v2 = 0 m/s / 6 s**

 **v2 = 0 m/s**

 **v3 = Δs3/Δt3**

 **v3 = s3 – s2 / t3 – t2**

 **v3 = 80 m – 50 m / 11 s – 8 s**

 **v3 = 30 m / 3 s**

 **v3 = 10 m/s**

|  |  |  |  |
| --- | --- | --- | --- |
| **v / m/s** | **25** | **0** | **10** |
| **t / s** | **2** | **8** | **11** |

**v / m/s**

 **40**

 **30**

 **20**

 **10**

 **2 4 6 8 10 12 t/s**

 **A B**

 **B C**

**C D**

 **v – t grafikon**