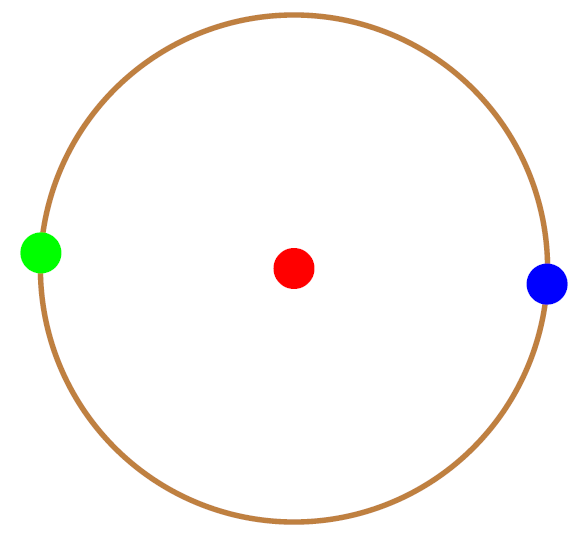
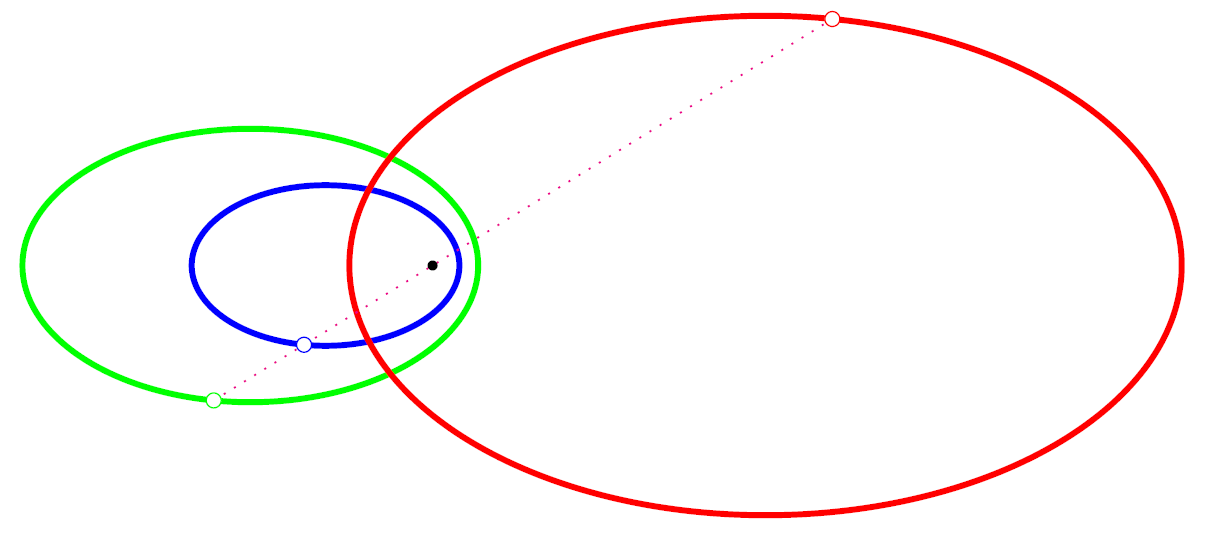
Following animations illustrating some “choreographies” in the three-body problem and a few typical three-body systems were prepared by Dr. Vladimir Titov (St. Petersburg State University, Russia) and one of the authors (AM, who used animation tools prepared by VT and code for numerical integration of orbits by Dr. Seppo Mikkola from Tuorla Observatory, University of Turku, Finland).

Adobe Acrobat Reader DC is recommended to watch animated pdfs.

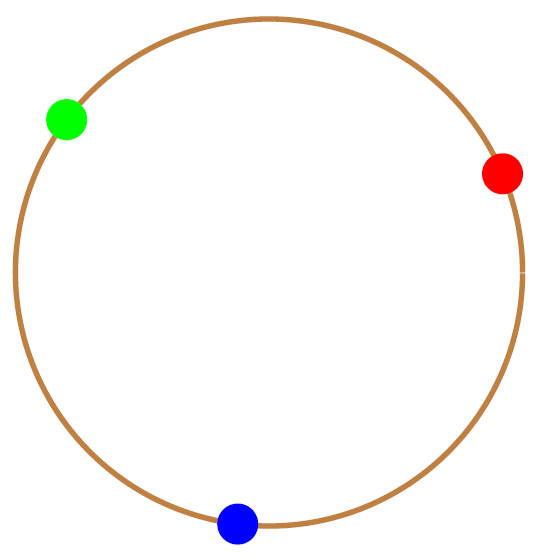
1. Euler solution (AM), see Fig. 1.2 (left) in the book: [pdf](Euler1.pdf) and [mp4](Euler.mp4)



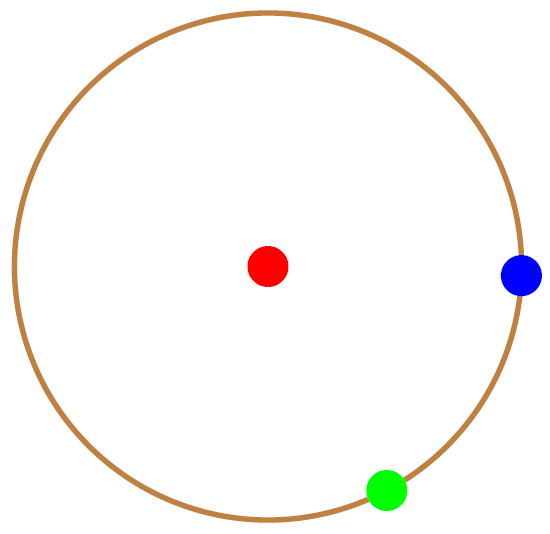
1. Euler solution in general case (VT): [pdf](E1.pdf) and [mp4](E1.mp4)



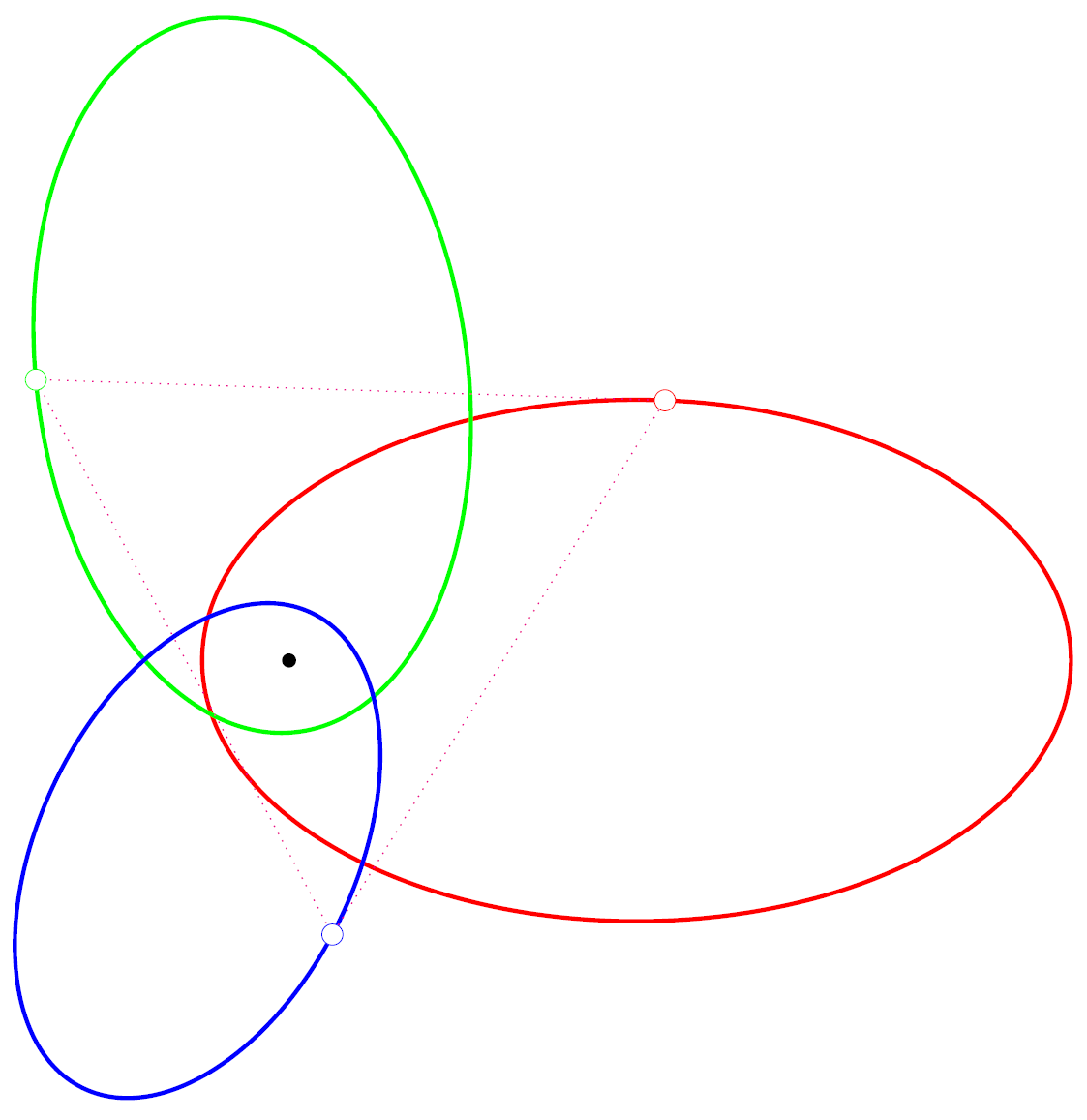
1. Lagrange solution
2. Case of equal masses (AM), see Fig. 1.2 (right) in the book: [pdf](file:///C:\Work\Now\Book_3_Bodies\Animations\Lagr1.pdf) and [mp4](file:///C:\Work\Now\Book_3_Bodies\Animations\Lagr_1.mp4)



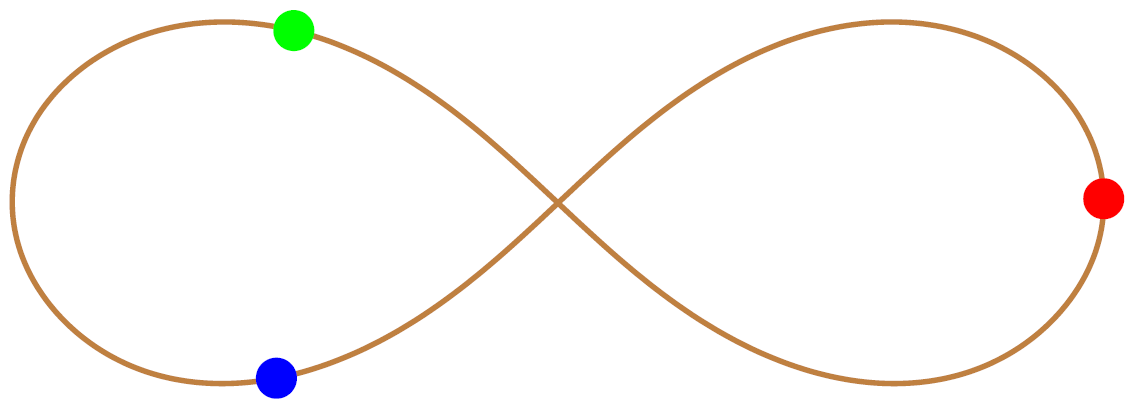
1. Case of unequal masses (AM), e.g. Sun-Jupiter-Trojan asteroid, see Fig. 1.3 in the book: [pdf](Lagr2.pdf) and [mp4](Lagr_2.mp4)



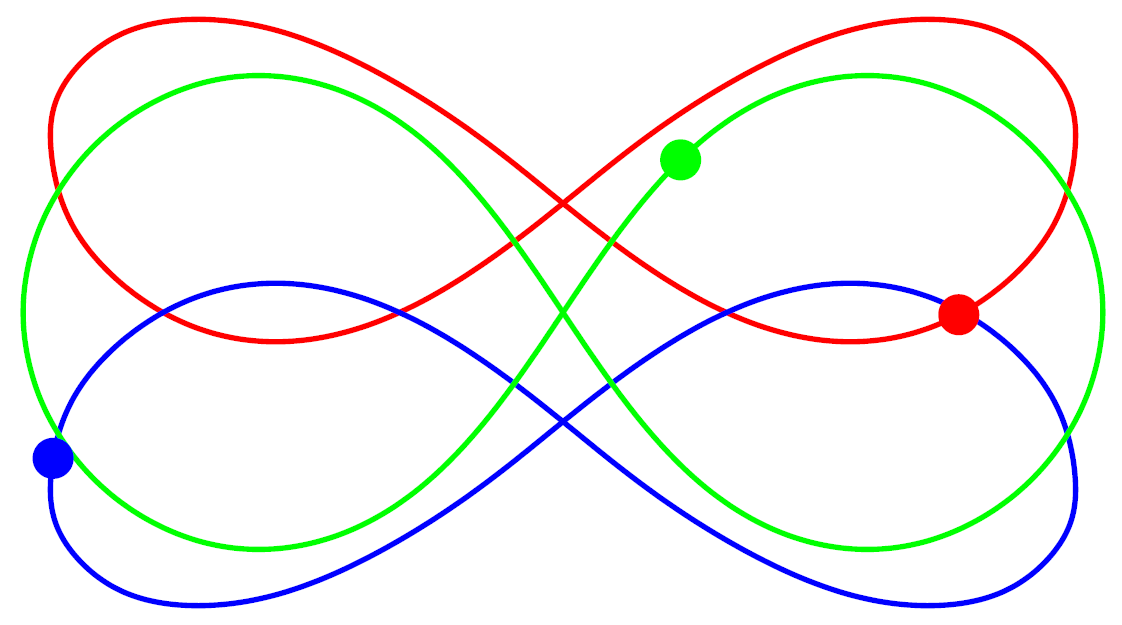
1. More general case (VT): [pdf](L1.pdf) and [mp4](L1.mp4)



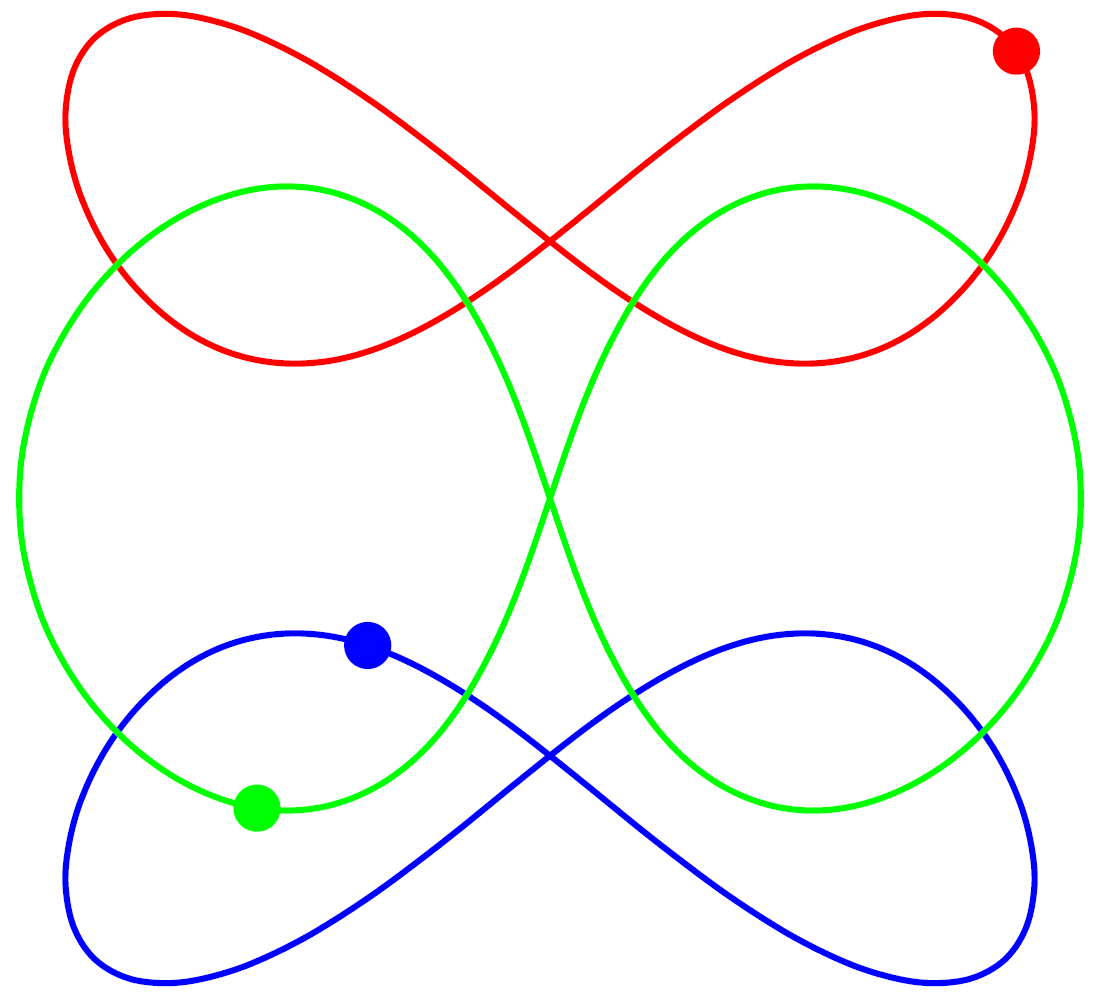
1. Figure Eight orbit (VT), see Fig. 1.4 in the book: [pdf](Eight.pdf) and [mp4](Eight.mp4)



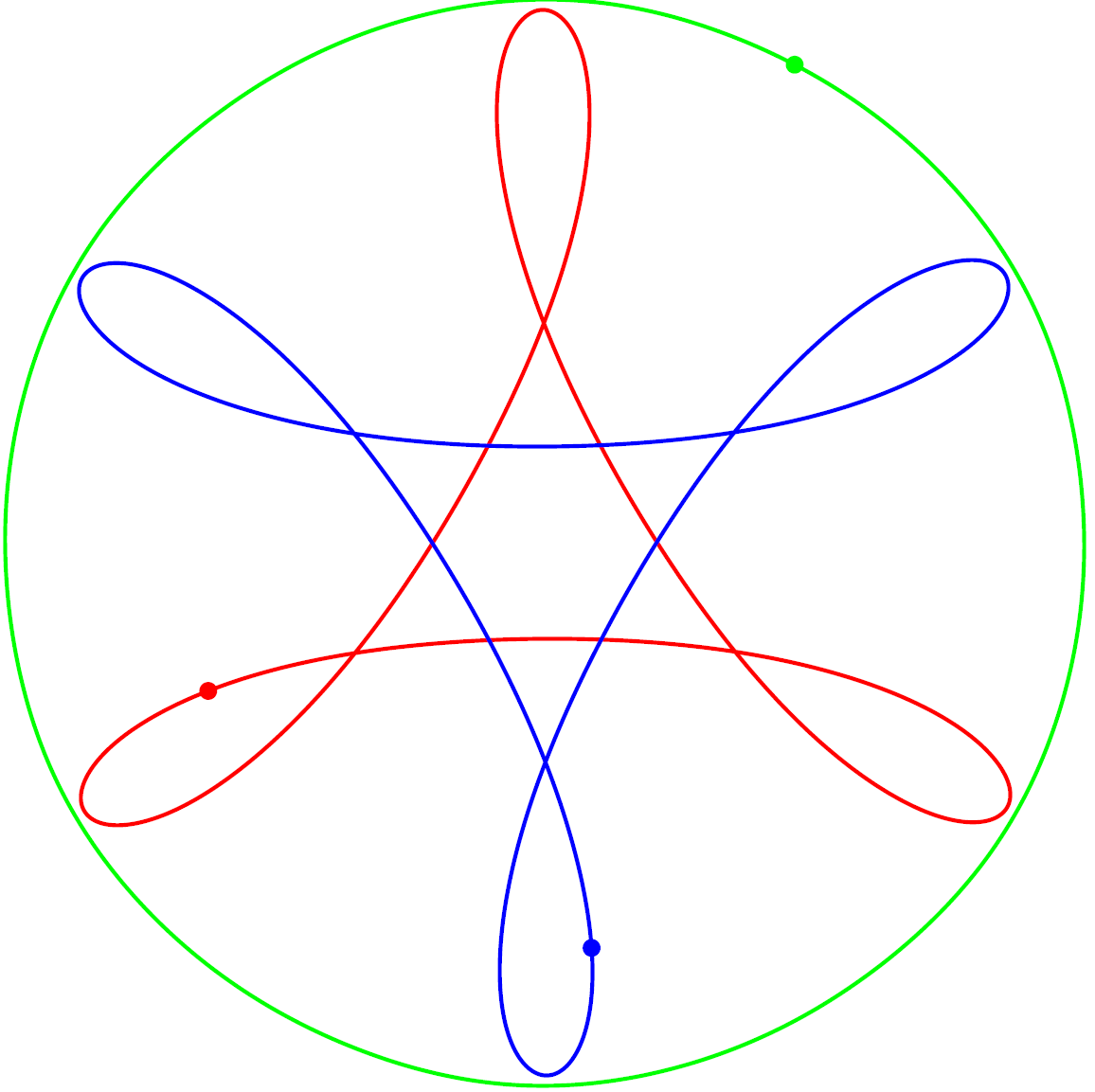
1. Split Figure Eight orbit (VT)
2. Mass of the middle body (green) is 0.97: [pdf](Iso.097.pdf) and [mp4](Iso_097.mp4)



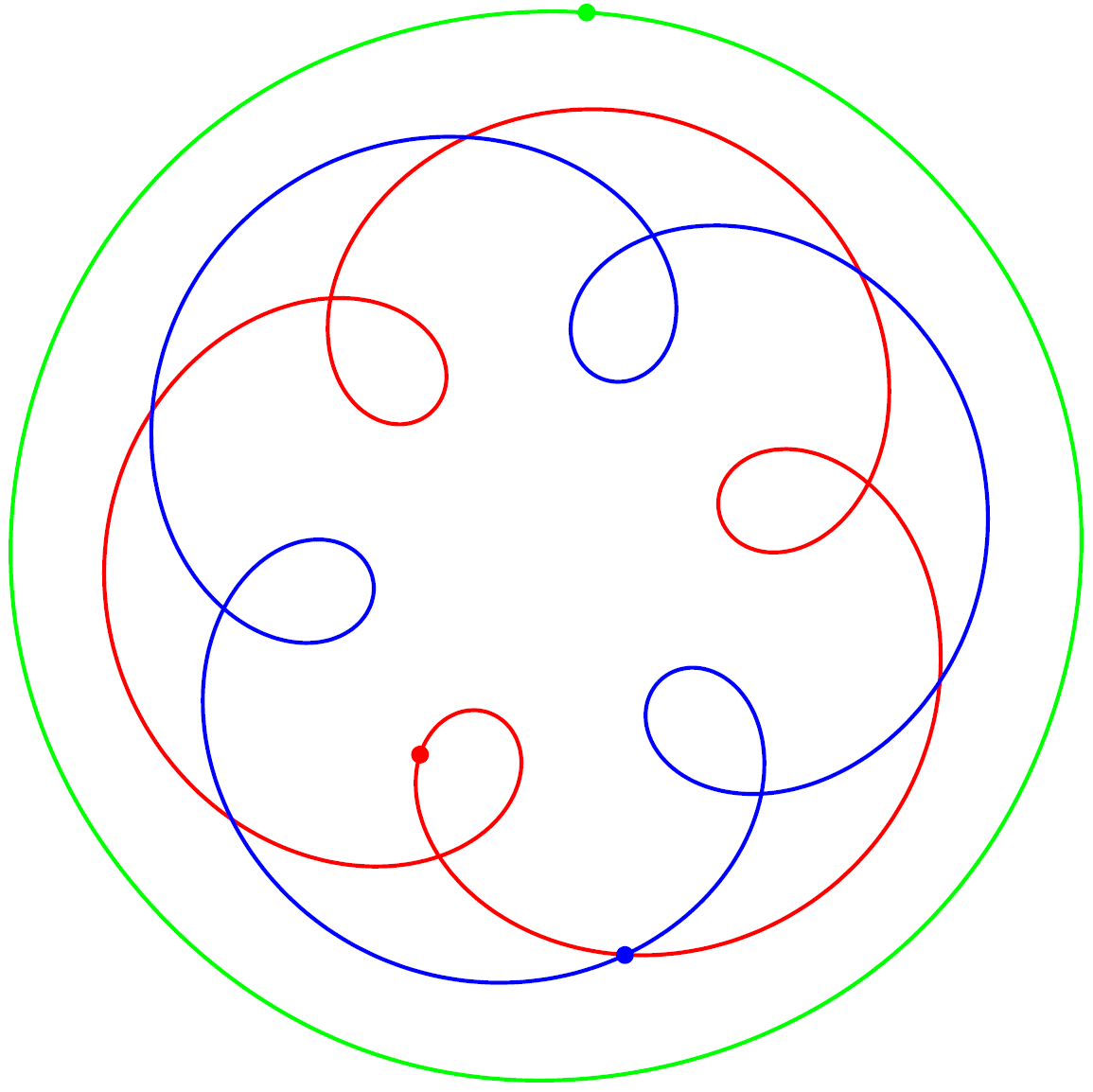
1. Mass of the middle body (green) is 0.87: [pdf](Iso.087.pdf) and [mp4](Iso_087.mp4)



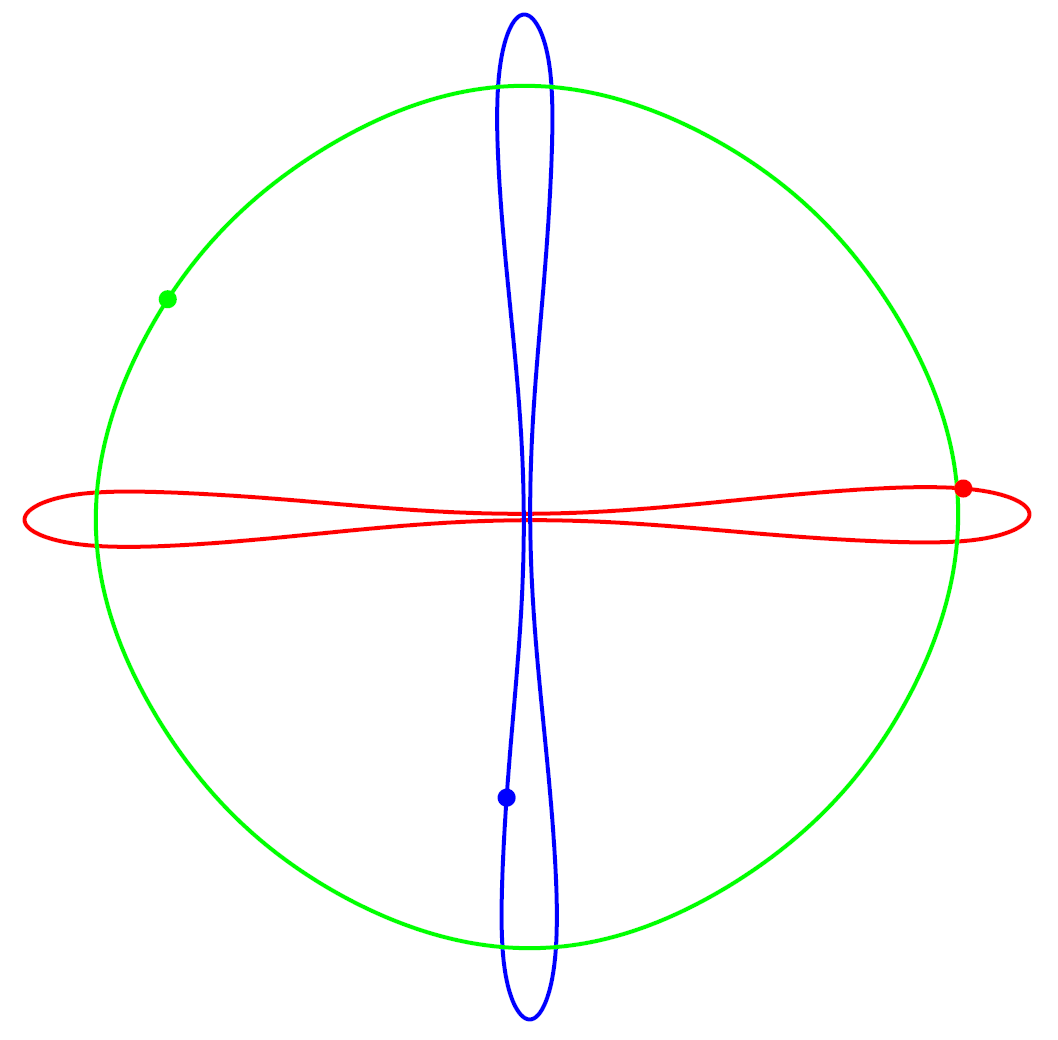
1. Some choreographies (VT)
2. 2-1 “choreography”: [pdf](2-1.0333-1.pdf) and [mp4](2-1.03333-1.mp4)



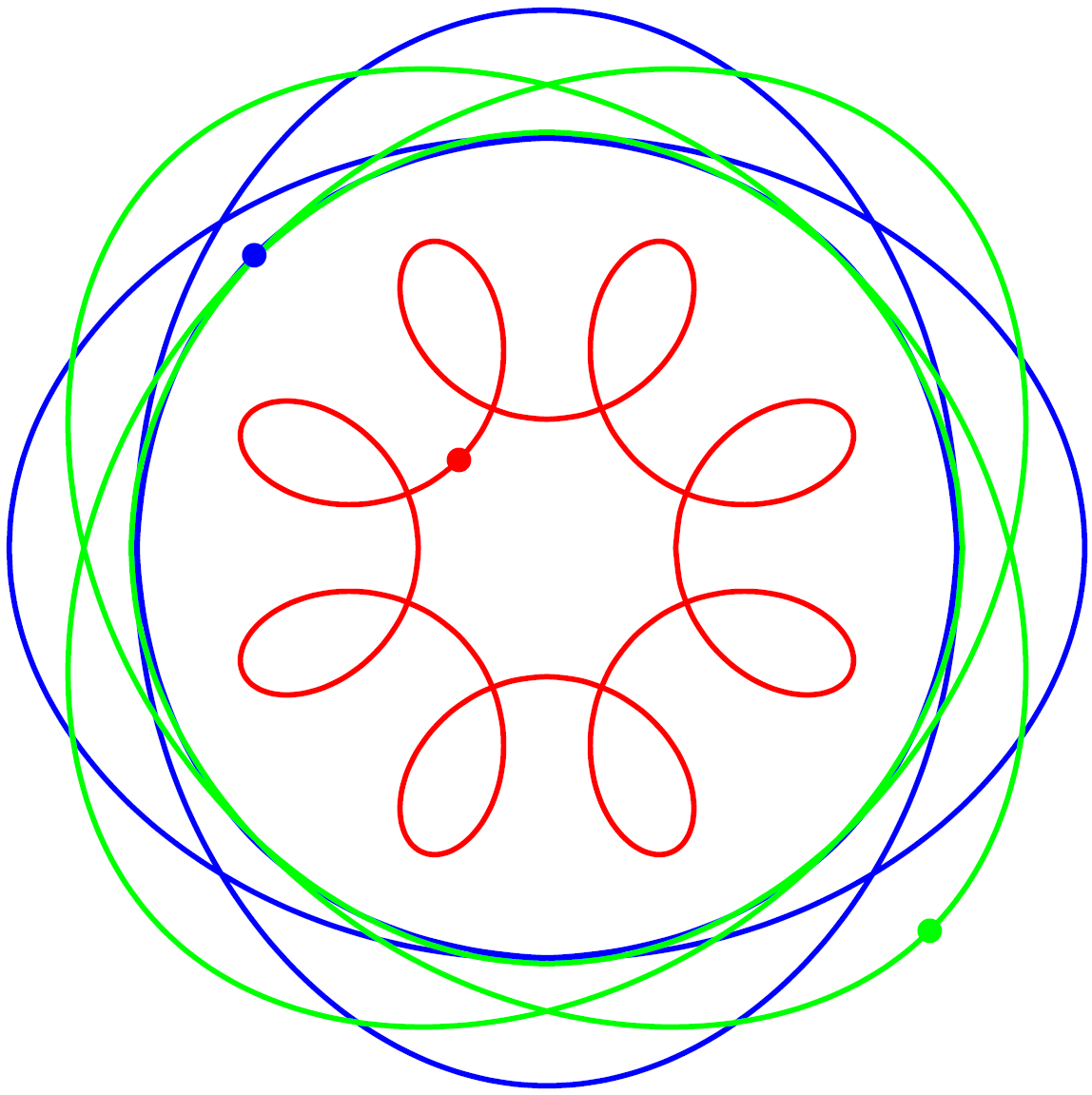
b. Another 2-1 “choreography”: [pdf](2-1.0333-2.pdf) and [mp4](2-1.03333-2.mp4)



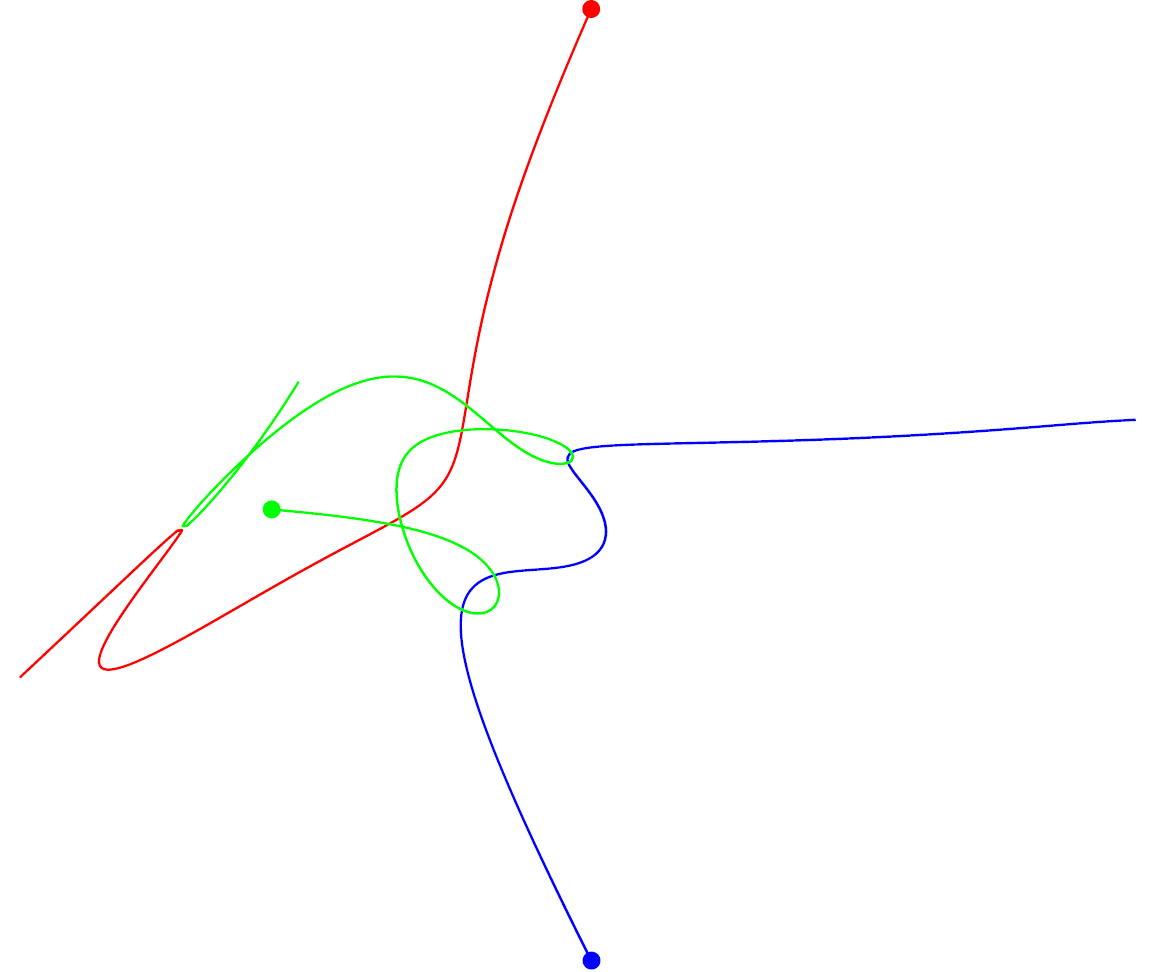
1. One more 2-1 “choreography”: [pdf](2-1.05-1.pdf) and [mp4](2-1.05-1.mp4)



1. One more “choreography”: [pdf](L.25-3.pdf) and [mp4](L.25.3.mp4)

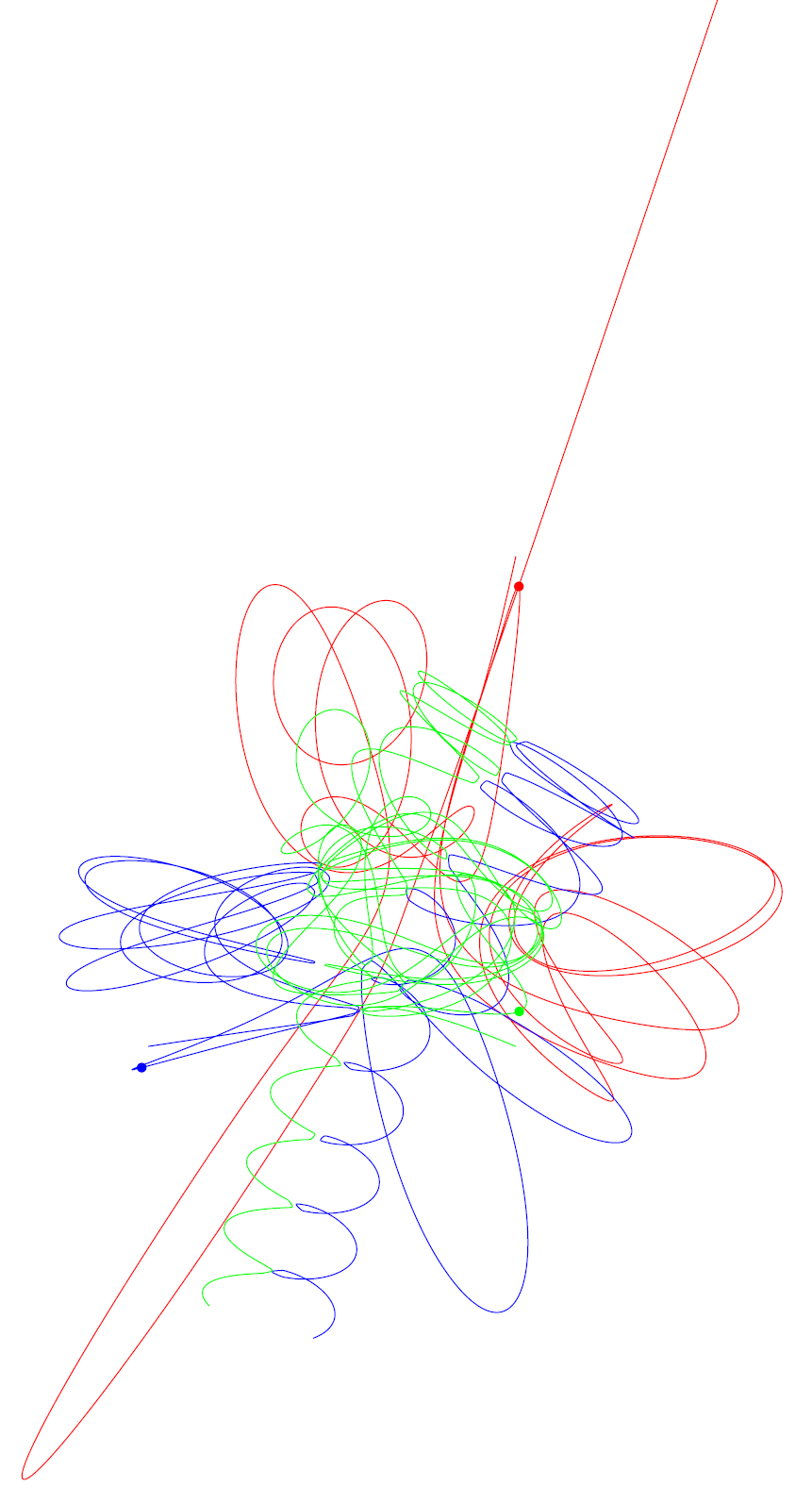


1. Free-fall periodic orbit (VT): [pdf](Free_fall_periodic.pdf) and [mp4](Free_fall_periodic.mp4)

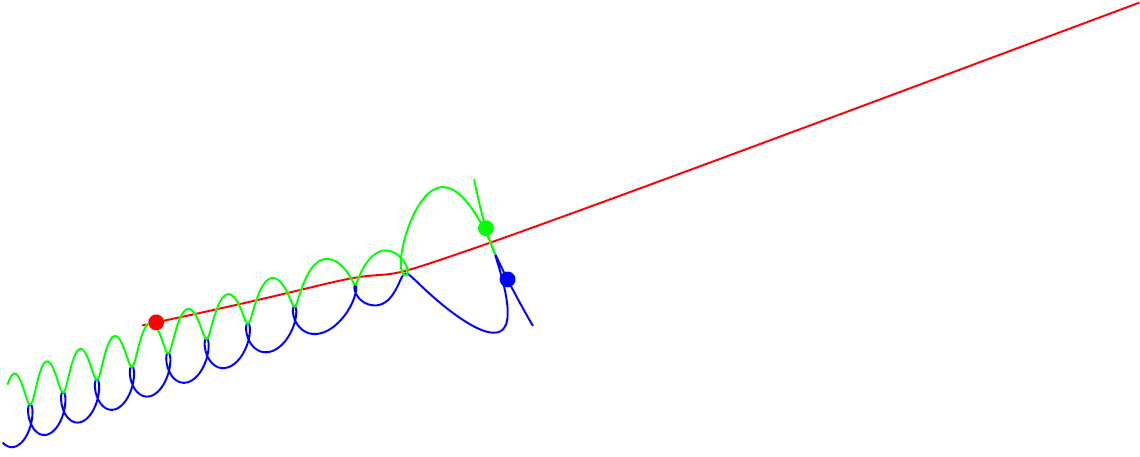


1. Pythagorean problem (AM), see Figs. 3.12 – 3.15 in the book. Notice decrease of the amplitude of the binary after the last triple encounter that resulted in the slingshot.

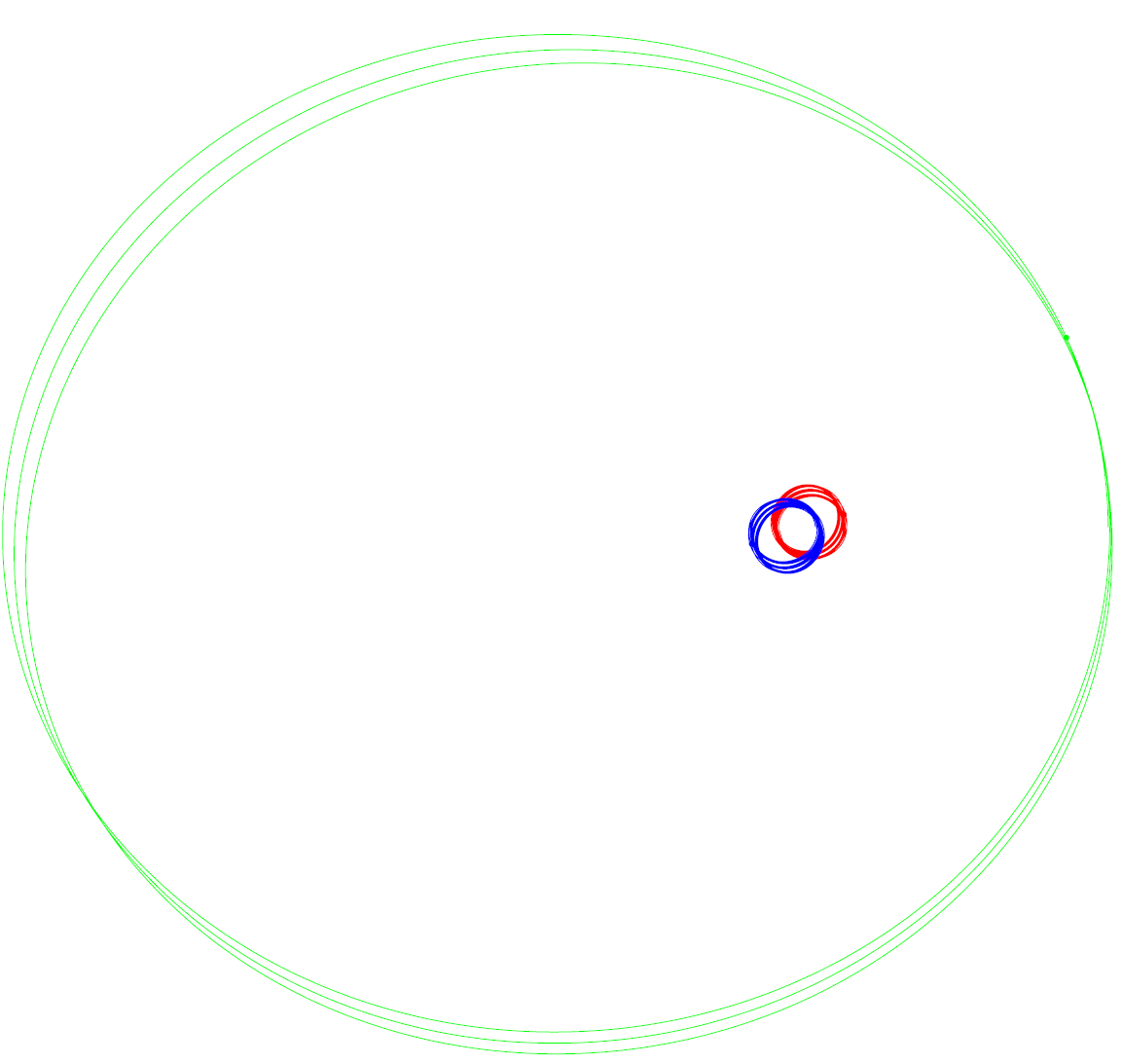
1. With trajectory plotted: [pdf](Pythagoras_Orbit.pdf) and [mp4](Pythagoras_Orbit.mp4) b. Without the trajectory: [pdf](Pythagoras_no_orbit.pdf) and [mp4](Pythagoras_no_orbit.mp4)



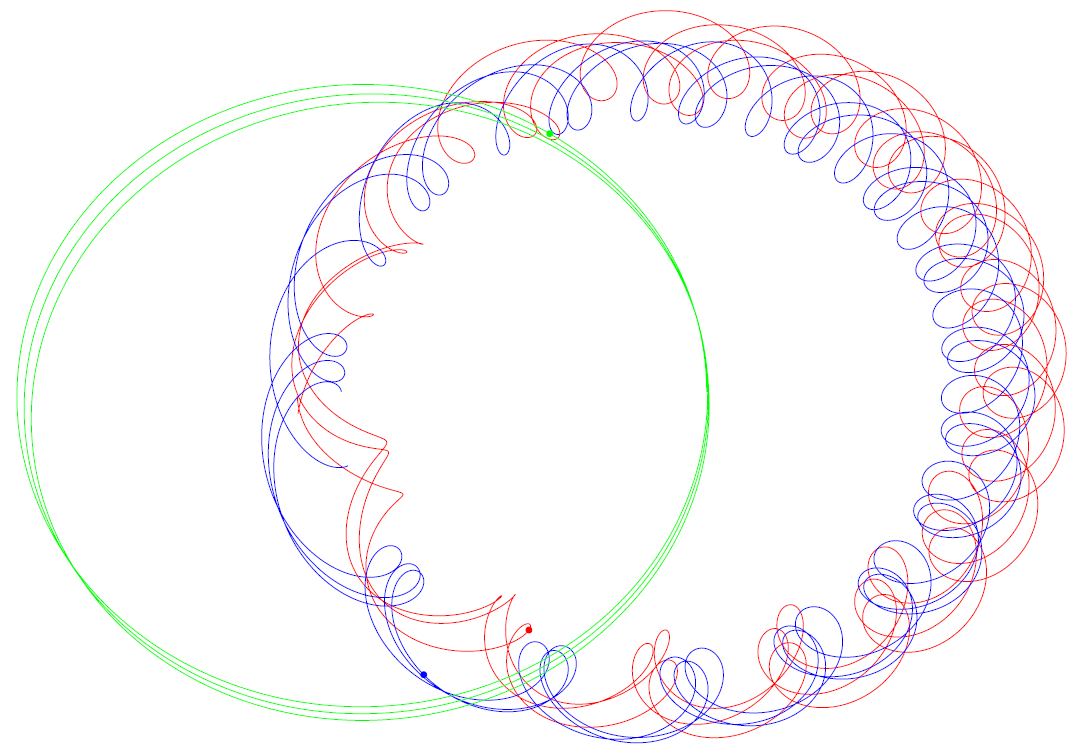
1. Short-living system (AM). Initial conditions are from the wide blue stripe on Fig. 4.6 (left), corresponds to region M (close to the point 1) on Fig. 4.1. First triple encounter leads to the slingshot. Notice decrease of the size of the binary after the triple encounter.
2. With orbit plotted: [pdf](Slingshot_Orbit.pdf) and [mp4](Slingshot_Orbit.mp4) b. Without the orbit: [pdf](Slingshot.pdf) and [mp4](Slingshot.mp4)



1. Long-living hierarchical system (AM). Initial conditions are from Bohlin (1923) – see Fig. 3.20 in the book. It is an example of the stability boundary case – system becomes unstable after 100,000 periods of the inner binary. First 50 periods of the inner binary are illustrated.
2. With orbit plotted, coordinate system with respect to the center of mass of the binary: [pdf](Bohlin_Orbit.pdf) and [mp4](Bohlin_Orbit.mp4)



1. Same as in a, no orbit plotted: [pdf](Bohlin.pdf) and [mp4](Bohlin.mp4)
2. With orbit plotted, coordinate system with respect to the center of mass of triple system: [pdf](Bohlin_CM_Orbit.pdf) and [mp4](Bohlin_CM_Orbit.mp4)



1. Same as in c, no orbit plotted: [pdf](Bohlin_CM.pdf) and [mp4](Bohlin_CM.mp4)