Action at the Monster Mash

Exercise 1.5.2 The moving ball-wall-trapped-ball constructions in Fig. 5.4 started in class involve a plot of an $M_{Monster} \to \infty$ "ball-wall" coming in with unit slope (velocity) to hit a stationary much smaller m_2. (Again, idealize "balls" as point masses.) m_2 bounces elastically between $M_{Monster}$ and a wall at $x=0$.

(a) Finish construction started in class as far as you (reasonably) can. (Definition of reason not given!)
(b) Do a construction where $M_{Monster}$ has a velocity of $1/2$ and intercepts m_2 when it has velocity -1 at space-time point $(x=-2, t=4)$, that is, 2 units from the fixed wall on the right. Construct six or more back-and-forth collisions. Discuss similarity and differences with Fig. 5.4.
(c) Also, construct one or two *prior* collisions (before $t=4$).
(xtra) Evaluate approximate-average action values as described in class or after Fig. 5.4 in Unit 1.

Ford circles and Farey sums

Exercise 1.5.3 Complete the fraction-geometry construction started in class up to denominator 10. (See also Lect. 5to7 (2.11.16) pages 138-141)