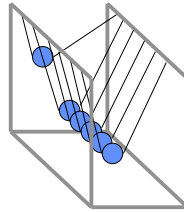


### Problems class 4

An executive toy ("Newton's cradle") consists of 6 identical steel balls suspended in a frame as shown below.

If the first ball is raised to a height of 3 cm above the level at which it is suspended, then released, describe the subsequent motion of the balls.

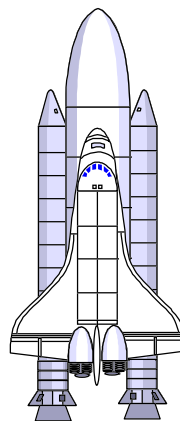


Assume the collisions are elastic. Discuss what will happen if initially two balls are raised to a height of 3cm and then released together.

1

### Problems class 4

Compare the maximum speeds attained from rest of a one stage and a two stage rocket with engines of the same thrust. Both stages of the two stage rocket are identical and together they have the same mass as the one stage rocket. In all cases half of the rocket's mass is its fuel. Assume the rockets are in a region of space far from massive objects.



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