Q1:

q/m = 0

A blue oval with numbers

Description automatically generated

q/m = 0.5

A blue circle with lines in it

Description automatically generated with medium confidence

q/m = 1

A blue line in a circle

Description automatically generated

q/m = 2

A blue line drawn on a white background

Description automatically generated

It can be seen that, as q/m increases, the amplitude of the oscillation of the mass on the spring increases.