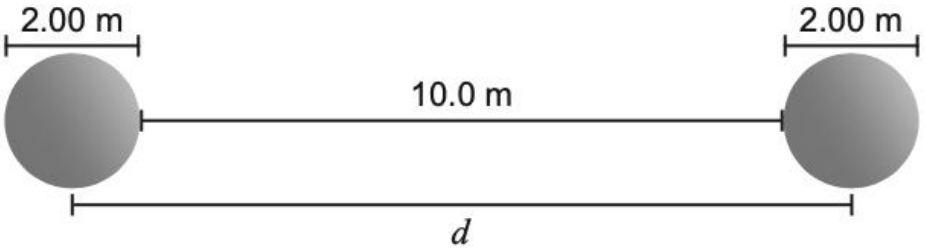
Question 8 **(7 marks)**

Two identical solid and uniform spheres are separated by a distance of 10.0 m from surface to surface. The distance between their centres is called d.

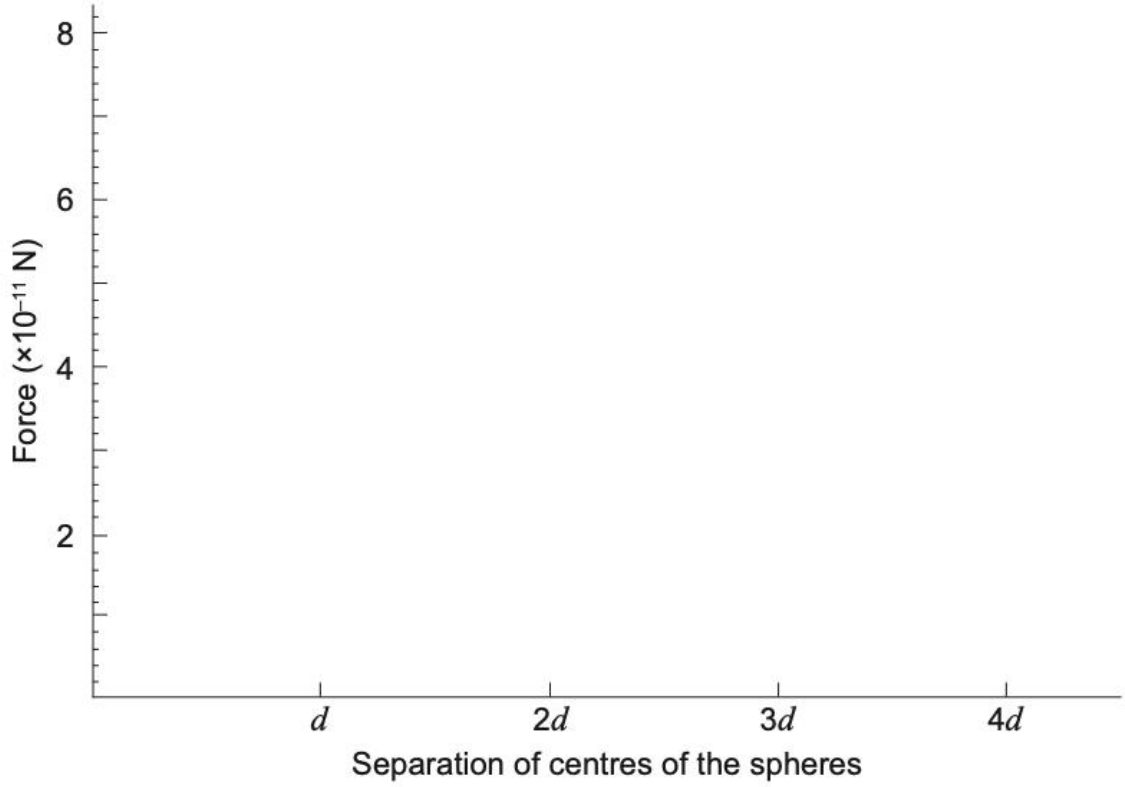


(a) If each sphere has a mass of 12.50 kg and a diameter of 2.00 m, calculate the gravitational force between them. (3 marks)

Answer: _____ N

(b) On the axes below, show how the gravitational force between the two spheres varies as they move apart. Indicate the magnitude of the forces on the y-axis at the points $2d$ and $4d$ on the x-axis. If you could not obtain an answer to part (a), use 7.50×10^{-11} N.

(4 marks)



A spare axes is provided at the end of this Question/Answer booklet. If you need to use it, cross out this attempt and indicate that you have redrawn it on the spare axes.