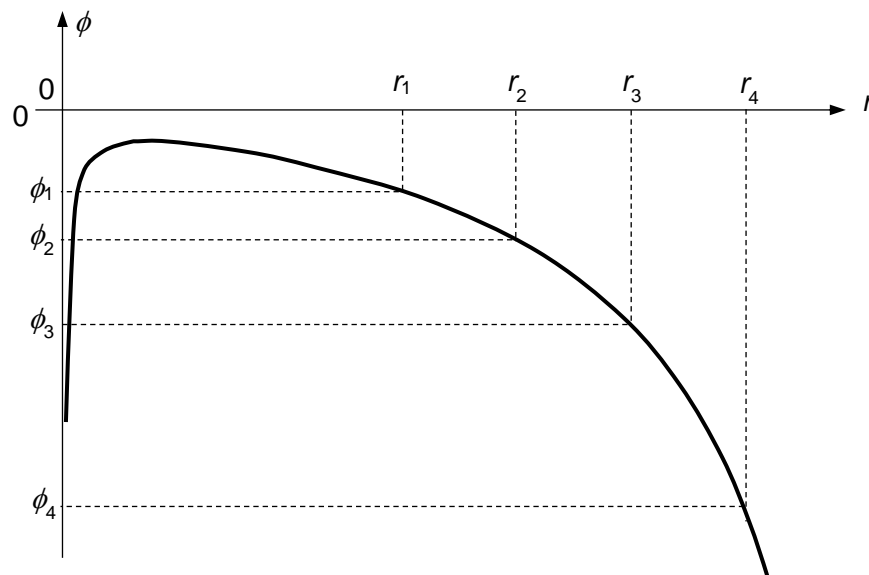


- 14 The gravitational potential ϕ along the line joining the centres of a planet and its moon varies with the distance r from the centre of the moon as shown.



Which of the following expressions gives a value that is closest to that of the gravitational force acting on a 1 kg mass at a distance of r_2 ?

A $\frac{\phi_1 - \phi_2}{r_2 - r_1}$

B $-\frac{\phi_2}{r_2}$

C $\frac{\phi_1 - \phi_3}{r_3 - r_1}$

D $\frac{\phi_1 - \phi_4}{r_4 - r_1}$

- 15 Earth has a mass of 6.0×10^{24} kg. The Moon has a mass of 7.4×10^{22} kg. The distance between the centres of the Earth and the Moon is 3.8×10^8 m. Calculate the gravitational force of attraction between the Earth and the Moon.