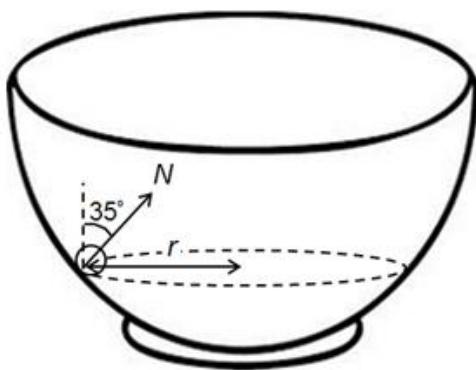
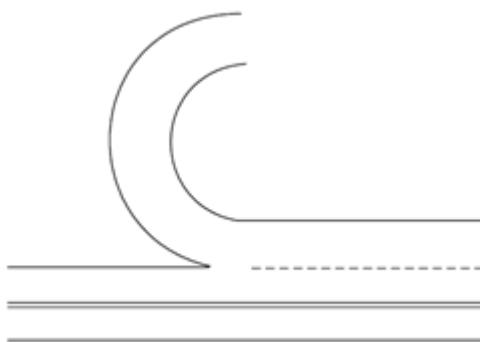


- 10** A small glass marble is moving in a horizontal circle round the inside surface of a smooth bowl. Its angular velocity is 8.0 rad s^{-1} and the normal reaction N acting on the marble is inclined at 35° to the vertical as shown.



What is the radius r of the horizontal circle?

- A** 0.050 m **B** 0.070 m **C** 0.090 m **D** 0.11 m
- 11** Many highway entrance and exit roads are circular and designed for cars moving at 50 km h^{-1} .



To design a similar road for a speed of 100 km h^{-1} the engineers should increase the radius of the circular section by a factor of

- A** $\sqrt{2}$ **B** 2 **C** 3 **D** 4