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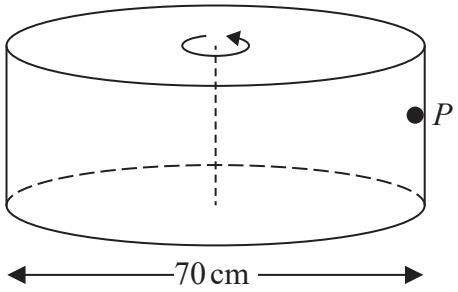


Figure 1

Figure 1 shows a hollow cylinder with diameter 70 cm. The cylinder is rotating at a constant angular speed about its axis, which is vertical. As the cylinder rotates, a particle P remains in contact with the same point on the rough inside surface of the cylinder. The particle is moving in a horizontal circle of diameter 70 cm.

The cylinder makes 2 complete revolutions every second.

The coefficient of friction between P and the cylinder is μ.

Find the range of possible values of μ.

(6)

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Question 1 continued

Q1

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