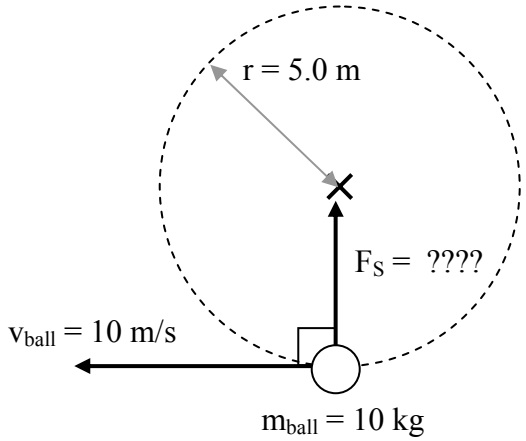
W5.05

Basic Vertical Circles – KEY

A ball is being spun in a vertical circle at a constant speed. The ball is connected to the center by a rigid rod supplying a support force. Find the missing values for these vertical circles.

1.



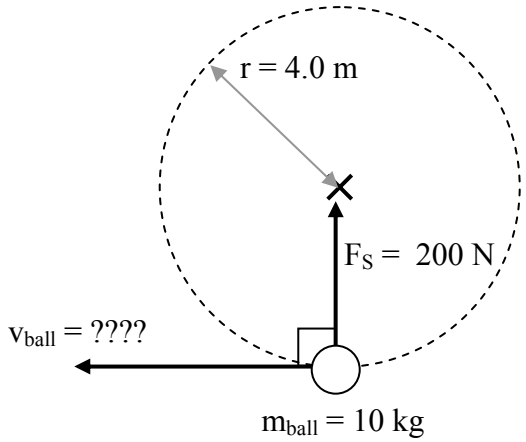
Find the following:

$F_{support}$ (N) = 300 N

Period (s) = 3.14 s

Frequency (Hz) = 0.318 Hz

2.



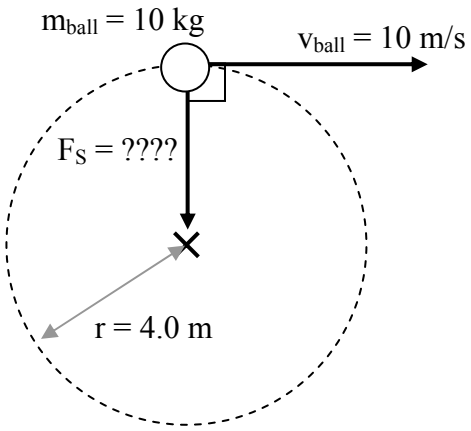
Find the following:

Speed (m/s) = 6.32 m/s

Period (s) = 3.97 s

Frequency (Hz) = 0.252 Hz

3.

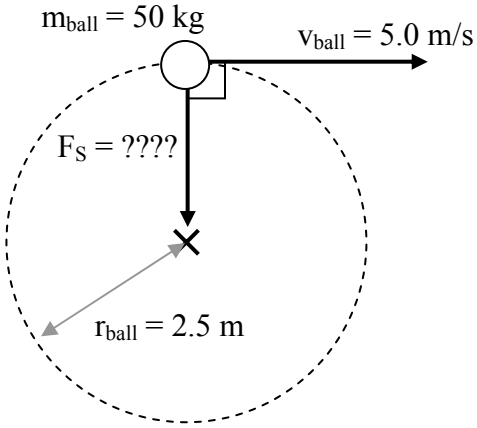


Find the following:

$F_{support}$ (N) = 150 N

Period (s) = 2.51 s

4.

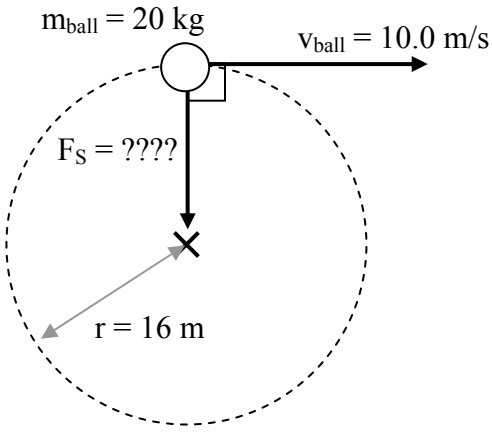


Find the following:

$F_{support}$ (N) = 0 N

Period (s) = 3.14 s

5.



Find the following:

$F_{support}$ (N) = -75 N

Frequency (Hz) = 0.0995 Hz