TOPIC
Strength of Materials – Section VIII – Question 1

QUESTION
A 1-meter diameter steel cylindrical tank used to store propane at high pressure. If the allowable stress of steel is 100 MPa and the propane is stored at a pressure of 1000 kPa, the minimum thickness in mm of the tank most nearly is
   (A) 5.0
   (B) 7.5
   (C) 10
   (D) 20

HINT
Hoop stress in the tank governs the maximum allowable stress
Hoop stress is equal to circumferential stress and tangential stress

CONTRIBUTOR
Glen Besterfield