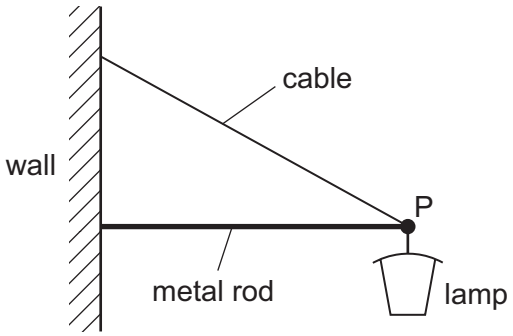
12 In order that a train can stop safely, it will always pass a signal showing a yellow light before it reaches a signal showing a red light. Drivers apply the brake at the yellow light and this results in a uniform deceleration to stop exactly at the red light.

The distance between the red and yellow lights is x.

What must be the minimum distance between the lights if the train speed is increased by 20 %, without changing the deceleration of the trains?

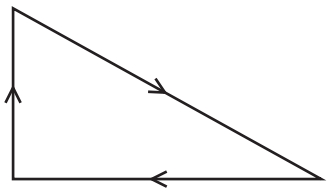
A 1.20 x **B** 1.25 x **C** 1.44 x **D** 1.56 x

13 A street lamp is fixed to a wall by a metal rod and a cable.

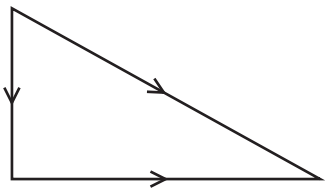


Which vector triangle represents the forces acting at point P?

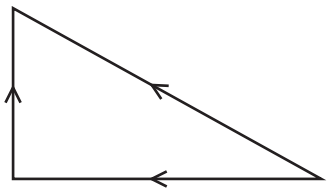
A



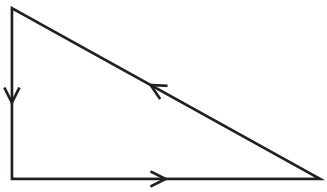
B



C



D



Space for working