

17 A boy on a bicycle starts from rest and rolls down a hill inclined at 30° to the horizontal.

The boy and bicycle have a combined mass of 25 kg.

There is a frictional force of 30 N, which is independent of the velocity of the bicycle.

What is the kinetic energy of the boy and the bicycle after rolling 20 m down the slope?

A 1850 J

B 2450 J

C 3050 J

D 3640 J

18 An escalator in an underground station has 250 people standing on it and is moving with a