Exercise

Work, Energy & Power

**by
Siti Aisah binti Harun
Faculty of Industry Science &Technology
aishahh@ump.edu.my**

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4 kg box of paper sliding from top to the bottom of the 30^0 inclined plane. Determine the work done on the box if the coefficient of kinetic, $\mu k = 0.2$ and the height of inclined plane, h = 20 m.

(512.920 J)

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Exercise 2

Maliki push a shopping trolley by applying a force $\vec{F} = \left(6\hat{i} - 2\hat{j}\right)$ N. This trolley undergoes a displacement $\Delta S = \left(3\hat{i} + \hat{j}\right)$ m. Determine the

   (a) work done by Maliki
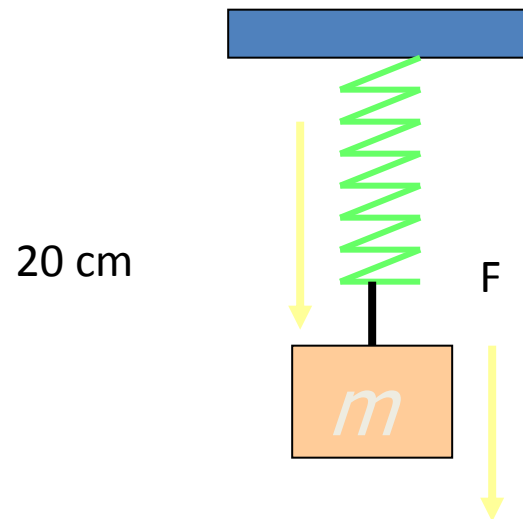   (b) angle between the force and displacement

(a = 16 J, b = 36.87 degree)

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Determine the spring constant and work done by spring if a 4-kg block is suspended from a spring produces a displacement of 20 cm.

20 cm

F

m

(a = 196.2 , b = - 7.848 J)

Suppose a spring has constant k = 500 N/m. It is currently at rest. You want to compressed it by 2 m. How much work must you do? How much spring does work?

(Wp = 1000 J, Ws = -1000 J)