SOLUTIONS

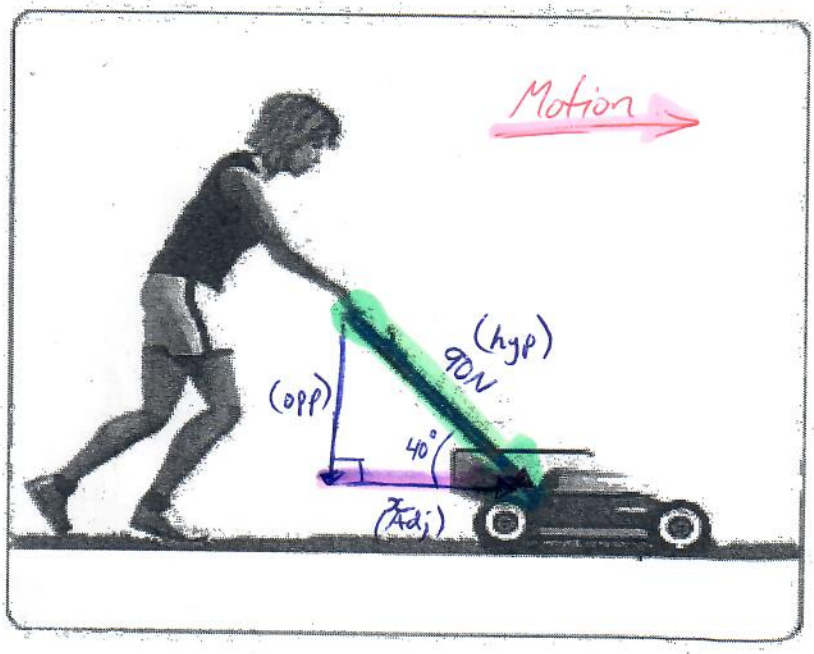
Practice Problems:

1) Susan pushes a lawnmower over a distance of 8m.
Susan is pushing on the lawnmower with a force of 90N at an angle of 40° from the ground.

a) On the picture below draw a single arrow (in the proper location) that indicates the force with which Susan is pushing with, the origin point of the force, its direction, and magnitude.

b) Draw arrows to indicate the parallel and perpendicular components of the force.

c) Calculate the Effective force.



CAH

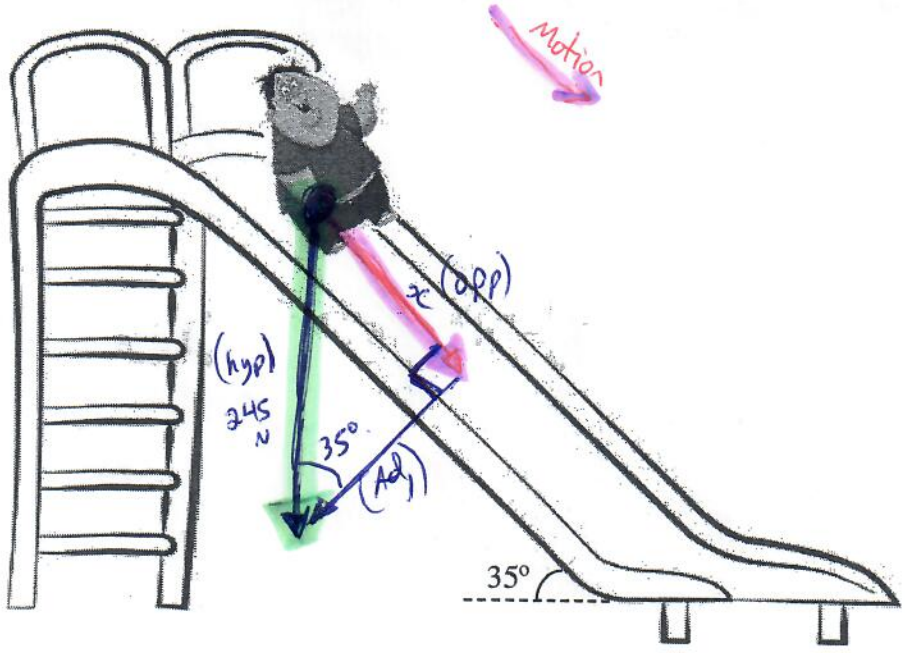
$\cos\theta = \frac{Adj}{Hyp}$

$\cos 40 = \frac{x}{90}$

$0.766 = \frac{x}{90}$

$x = 69N$ → Effective Force.

2) A child with a mass of 25kg slides down the following slide.
Use Trigonometry to calculate the child's Effective force.



$W = mg$

$W = 25(9.8)$

$W = 245N$

SOH

$\sin\theta = \frac{opp}{hyp}$

$\sin 35 = \frac{x}{245}$

$0.574 = \frac{x}{245}$

$x = 140N$ → Effective Force.