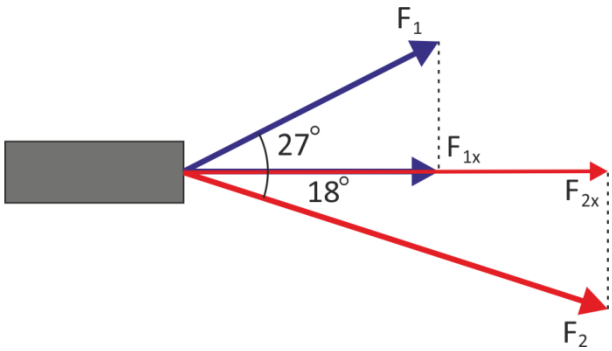
Answer on Question #39351, Physics, Mechanics

Two men decide to use their cars to pull a truck stuck in mud. They attach ropes and one pulls with a force of 757 N at an angle of 27° with respect to the direction in which the truck is headed, while the other car pulls with a force of 1177 N at an angle of 18° with respect to the same direction What is the net forward force exerted on the truck in the direction it is headed? Answer in units of N.

Solution:

The net force is the overall force acting on an object.



$F_1 = 757$ N,

$F_2 = 1177$ N,

The net forward force exerted on the truck in the direction it is headed:

$F_x = F_{1x} + F_{2x} = F_1 \cdot \cos(27°) + F_2 \cdot \cos(18°) = 757 \cdot \cos(27°) + 1177 \cdot \cos(18°)$

$F_x = 757 \cdot 0.891 + 1177 \cdot 0.951 = 1793.8 \approx 1794$ N

Answer. 1794 N