Forces and Tension

Sums of 2 Forces

A crate is being pulled by 2 ATVs. The tow ropes make angles of 45^0 to each other, and the ATVs are pulling with forces of 363 N and 448 N, respectively. Find the resultant force.

Tension – force exerted by a string or cable or similar object. (Opposite of compression force)

Simple Example – A student weighing 70 kg, hangs from a vertical rope in the gym. What is the tension in the rope?

Harder Example

A sign with a mass of 56.1kg is supported by 2 wires attached to a horizontal pole. The angle of depression of the wire on the left is 15° and the angle of depression of the wire on the right is 10^0. Determine the tension in each wire.

A 20 kg trunk is resting on a ramp inclined at an angle of 15°. Calculate the components of the force of gravity on the trunk that are parallel and perpendicular to the ramp.

Text page 142 #4, 6a, 9, 12 (equilibrium means forces balance out, no net force), 14, 15, 18