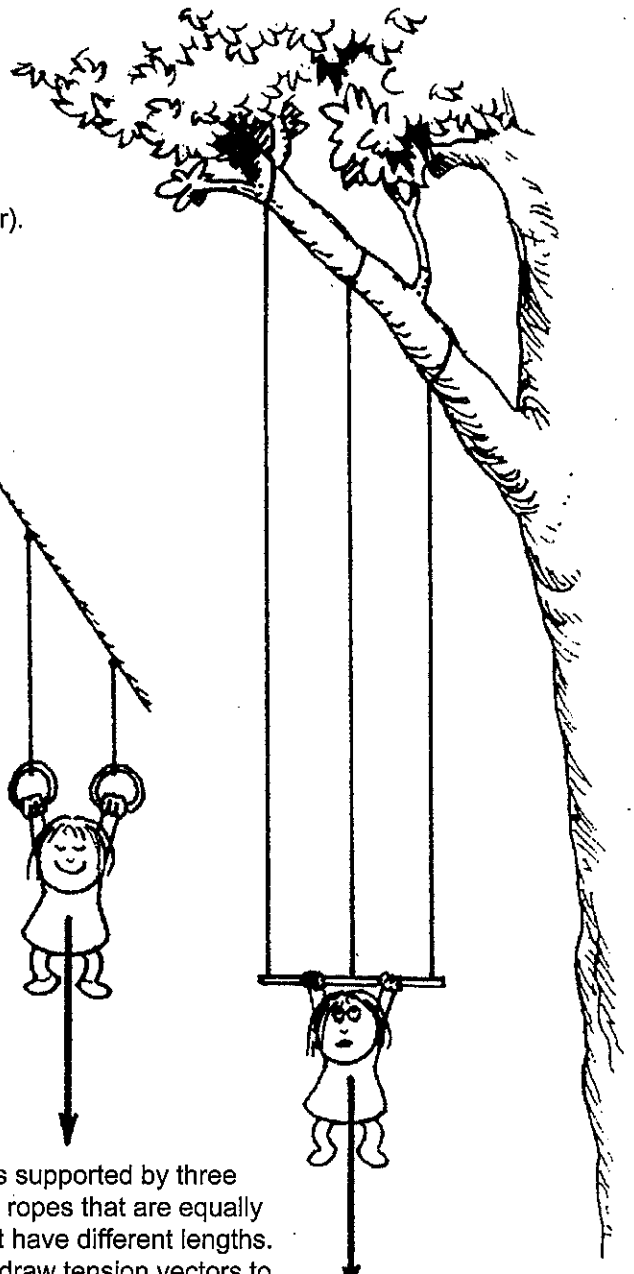
Name _____ Date _____

CONCEPTUAL **Physics** PRACTICE PAGE

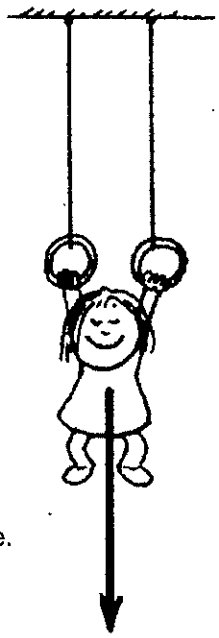
Chapter 2 Newton's First Law of Motion—Inertia

Vectors and Equilibrium

Nellie Newton dangles from a vertical rope in equilibrium: $\Sigma F = 0$. The tension in the rope (upward vector) has the same magnitude as the downward pull of gravity (downward vector).



1. Nellie is supported by two vertical ropes. Draw tension vectors to scale along the direction of each rope.



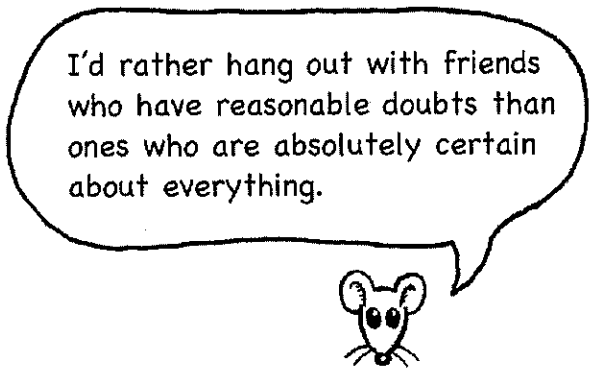
2. This time the vertical ropes have different lengths. Draw tension vectors to scale for each of the two ropes.

3. Nellie is supported by three vertical ropes that are equally taut but have different lengths. Again, draw tension vectors to scale for each of the three ropes.

4. We see that tension in a rope is [dependent on] [independent of] the length of the rope. So the length of a vector representing rope tension is [dependent on] [independent of] the length of the rope.

Rope tension does depend on the angle the rope makes with the vertical, as Practice Pages for Chapter 5 will show!

Hewitt Drew It!


I'd rather hang out with friends who have reasonable doubts than ones who are absolutely certain about everything.