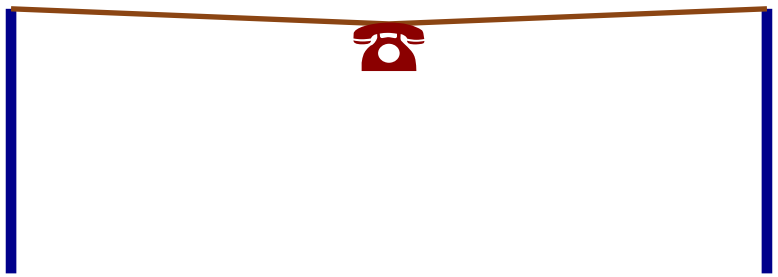
Warm Up Question 1

A person walks along a tightrope. The tightrope sags at the point where the person stands. When the person balances at rest left of the midpoint, the left side of the tightrope is steeper than the right. Is the tension in the left side the same as the right side? Explain your answer.

1. No. It's larger. Vertical components have to balance.
2. No. It's larger. Horizontal components have to balance.
3. No. It's larger. Other reason.
4. No. Directions are different.
5. Yes.

Question 1

A phone dangles at rest from the midpoint of two ropes.



Could the rope be perfectly horizontal?

1. Yes, if the phone is light enough; no if it is too heavy.
2. Yes, regardless of the phone's mass.
3. No, regardless of the phone's mass.

Question 2

A $1.0\,\mathrm{kg}$ object lies on a frictionless horizontal surface. A $4.0\,\mathrm{N}$ force pushes directly east and a $3.0\,\mathrm{N}$ force pushes directly west. Both forces are parallel to the surface.

Which of the following best represents the magnitude of the acceleration of the object?

1. $a = 0.0\,\mathrm{m/s^2}$
2. $a = 1.0\,\mathrm{m/s^2}$
3. $a = 3.0\,\mathrm{m/s^2}$
4. $a = 4.0\,\mathrm{m/s^2}$
5. $a = 7.0\,\mathrm{m/s^2}$

Question 3

A $1.0\,\mathrm{kg}$ object lies on a frictionless horizontal surface. A $4.0\,\mathrm{N}$ force pushes directly east and a $3.0\,\mathrm{N}$ force pushes at an angle midway between north and east. Both forces are parallel to the surface.

Which of the following best represents the magnitude of the acceleration of the object?

1. $a = 1.0\,\mathrm{m/s^2}$
2. $1.0\,\mathrm{m/s^2} < a < 5.0\,\mathrm{m/s^2}$
3. $a = 5.0\,\mathrm{m/s^2}$
4. $5.0\,\mathrm{m/s^2} < a < 7.0\,\mathrm{m/s^2}$
5. $a = 7.0\,\mathrm{m/s^2}$