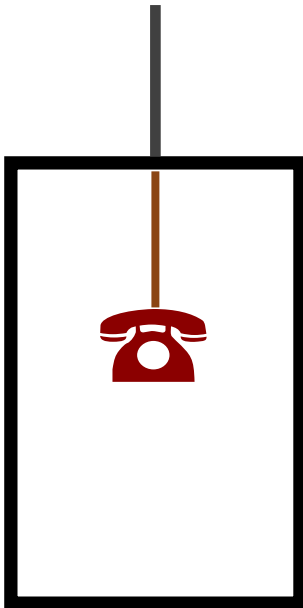# Question 1

A phone is suspended in an elevator as illustrated. The elevator moves up with a constant speed. The rope suspending the phone is taut throughout the motion.
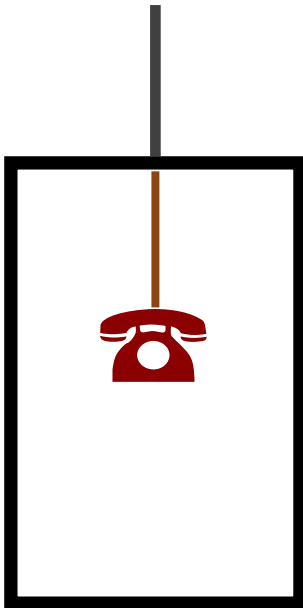
Let F_g denote the gravitational force exerted on the phone. Which of the following is true regarding the tension in the rope from which the phone is suspended while it moves up at a constant speed?

1. $T = F_g$

2. $T > F_g$

3. $T < F_g$

Question 2

A phone is suspended in an elevator as illustrated. The elevator moves down with decreasing speed. The rope suspending the phone is taut throughout the motion.

Let F_{g} denote the gravitational force exerted on the phone. Which of the following is true regarding the tension in the rope from which the phone is suspended while it moves as described?

1. $T = F_{\mathrm{g}}$

2. $T > F_{\mathrm{g}}$

3. $T < F_{\mathrm{g}}$

Question 3

A phone is suspended in an elevator as illustrated. The elevator moves down with increasing speed. The rope suspending the phone is taut throughout the motion.
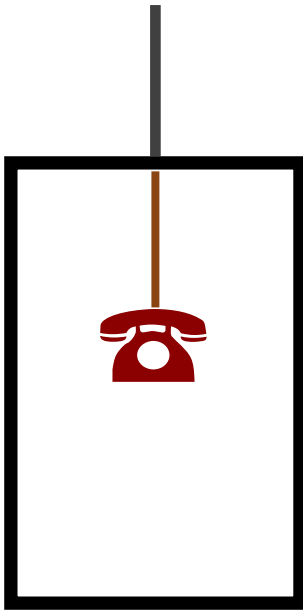

Let F_g denote the gravitational force exerted on the phone. Which of the following is true regarding the tension in the rope from which the phone is suspended while it moves as described?

1. $T = F_g$

2. $T > F_g$

3. $T < F_g$

Question 4

A phone with mass m is on the floor of an elevator as illustrated. The elevator moves up at a constant speed of $7\,\mathrm{m/s}$. The phone is on the floor throughout the motion.
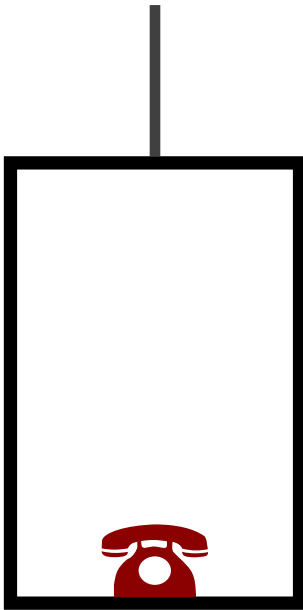

$7\,\mathrm{m/s}$
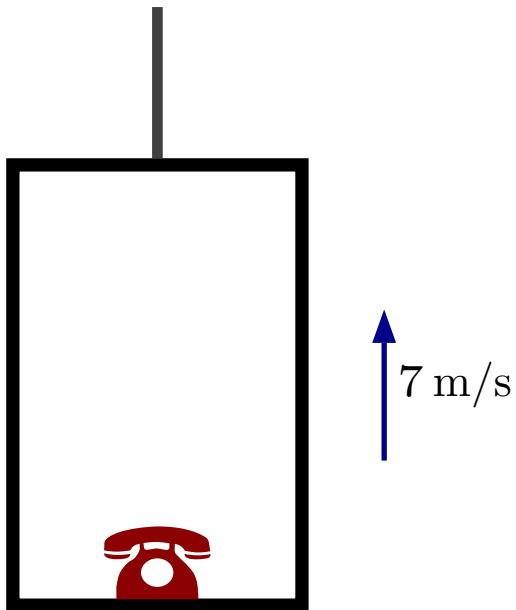
Which of the following is true of the magnitude of normal force exerted by the floor on the phone?

1. $n = 7\,\mathrm{N}$

2. $n = 9.8\,\mathrm{N}$

3. $n = mg$

4. $n > mg$

5. $n < mg$

Question 5

A phone with mass m is at rest on the floor of an elevator as illustrated. The elevator descends with a speed that decreases as time passes.

Which of the following is true regarding the magnitude of the normal force exerted by the elevator on the phone?

1. $n = 0$

2. $0 < n < mg$

3. $n = mg$

4. $n > mg$