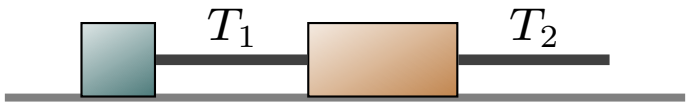
Question 1

Two blocks on a frictionless horizontal surface are connected by a massless rope. The larger block has a greater mass than the smaller block. The rightmost block is pulled by another massless rope. The blocks could either move left or right; the connecting rope is taut.

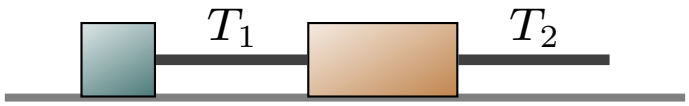


Which of the following is true while the blocks *move to the right*?

1. $T_1 = T_2$.
2. $T_1 > T_2$.
3. $T_1 < T_2$.

Question 2

Two blocks on a frictionless horizontal surface are connected by a massless rope. The larger block has a greater mass than the smaller block. The rightmost block is pulled by another massless rope. The blocks could either move left or right; the connecting rope is taut.

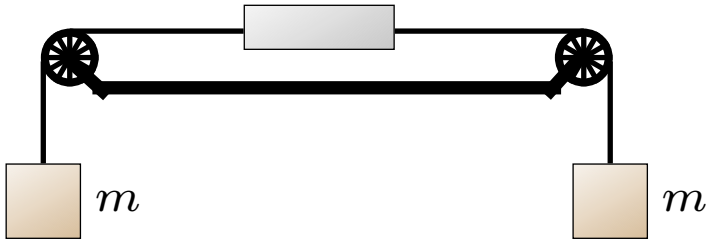


Which of the following is true while the blocks *move to the left*?

1. $T_1 = T_2$.
2. $T_1 > T_2$.
3. $T_1 < T_2$.

Question 3

A spring scale is connected to identical suspended objects, each with mass m. All are at rest.

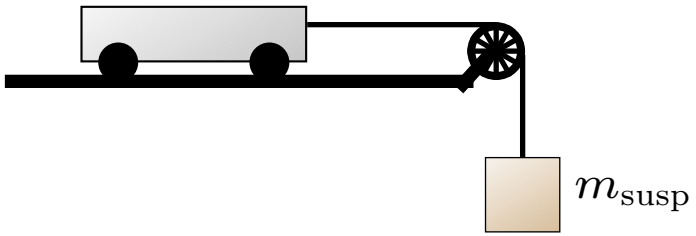


The spring scale measures the tension. Which of the following is the reading on the spring scale?

1. $T = mg$
2. $mg < T < 2mg$
3. $T = 2mg$
4. $T > 2mg$

Question 4

A cart is connected to a suspended object. The cart is released from rest.



Which of the following is true about the tension in the string after the cart is released?

1. $T = m_{\text{susp}}g$
2. $T < m_{\text{susp}}g$
3. $T > m_{\text{susp}}g$