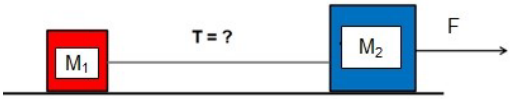
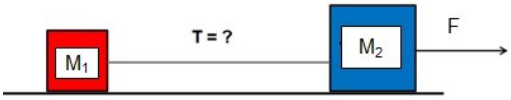
B		

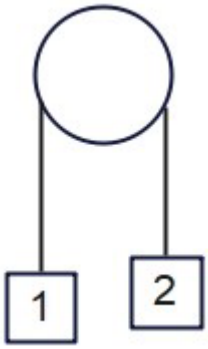
1. Two blocks are attached by a cord and pulled to the right with force F as shown to the right. If M_1 is 25 kg, M_2 is 17 kg and T is 28 N, then what is F?



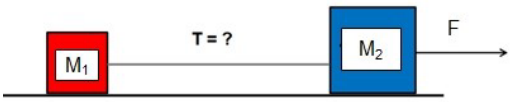
2. Two blocks are attached by a cord and pulled to the right with force F as shown to the right. If M_1 is 20 kg, M_2 is 14 kg and F is 58 N, then what is the tension (T) in the cord?



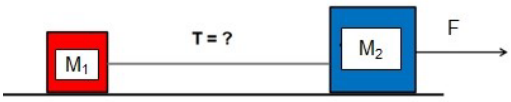
3. In the Atwood's machine shown to the right M_1 = 16 kg and M_2 = 5 kg. What is the tension in the string? [Counterclockwise rotation of the pulley is positive.]



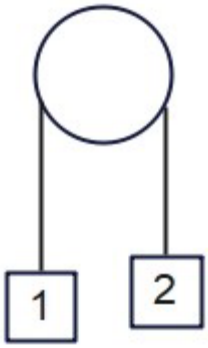
4. Two blocks are attached by a cord and pulled to the right with force F as shown to the right. If M_1 is 21 kg, M_2 is 12 kg and F is 39 N, then what is the tension (T) in the cord?



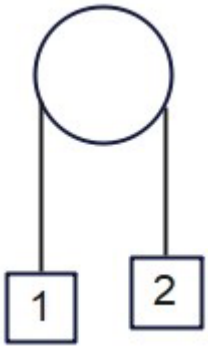
5. Two blocks are attached by a cord and pulled to the right with force F as shown to the right. If M_1 is 26 kg, M_2 is 22 kg and T is 29.3 N, then what is F?



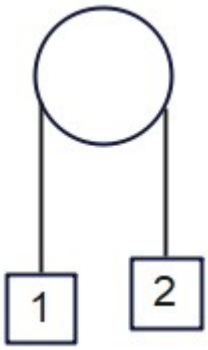
6. In the Atwood's machine shown to the right M_1 = 9 kg and M_2 = 9 kg. What is the acceleration of the system? [Counterclockwise rotation of the pulley is positive.]



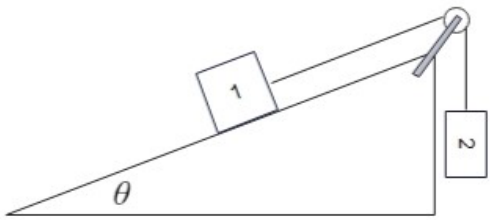
7. In the Atwood's machine shown to the right M_1 = 27 kg and M_2 = 18 kg. If M_1 is initially 6.3 m from the floor, moving in the positive direction at 0.97 m/s, then how many seconds does it take for M_1 to reach the floor? [Counterclockwise rotation of the pulley is positive.]



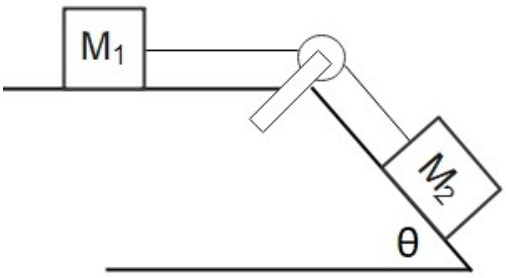
8. In the Atwood's machine shown to the right M_1 = 13 kg and M_2 = 23 kg. What is the tension in the string? [Counterclockwise rotation of the pulley is positive.]



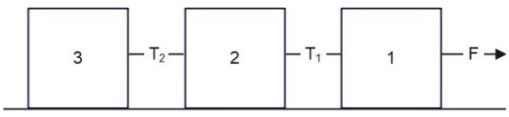
9. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless ramp and has a mass which is 5 kg less than block 2. The ramp is inclined at 27°. If the acceleration of the system is 5.91 m/s², then what is the mass of block 2? Assume up the ramp to be positive.



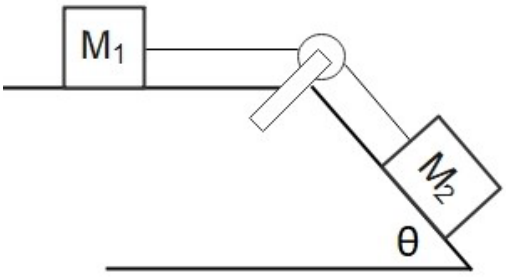
10. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless, horizontal surface and has a mass of 33 kg. Block 2 rests on a frictionless incline and has a mass of 36 kg. The angle of incline is 39°. If the system starts from rest then how many seconds are required for the system to be moving 6.6 m/s? Assume down the ramp to be positive.



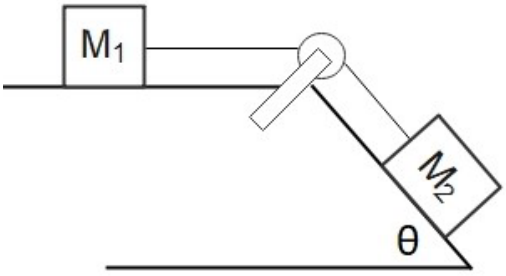
11. Three blocks attached by cords are pulled to the right by force F = 130 N. Block 1 has a mass of 20 kg, block 2 has a mass of 20 kg and block 3 has a mass of 11 kg. What is T_2?



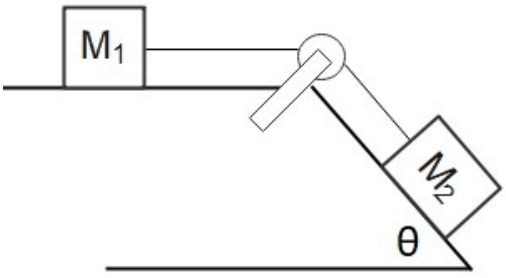
12. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless, horizontal surface and has a mass of 39 kg. Block 2 rests on a frictionless incline and has a mass of 44 kg. The angle of incline is 42°. What is the acceleration of the system? Assume down the ramp to be positive.



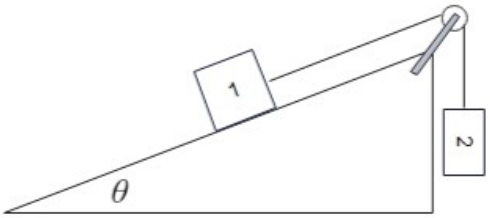
13. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless, horizontal surface and has a mass of 48 kg. Block 2 rests on a frictionless incline and has a mass of 50 kg. The angle of incline is 14°. If the system starts from rest then how many seconds are required for the system to be moving 1.77 m/s? Assume down the ramp to be positive.



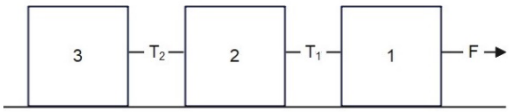
14. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless, horizontal surface and has a mass of 30 kg. Block 2 rests on a frictionless incline and has a mass of 38 kg. The angle of incline is 19°. If the system starts from rest then how many seconds are required for the system to be moving 4.81 m/s? Assume down the ramp to be positive.



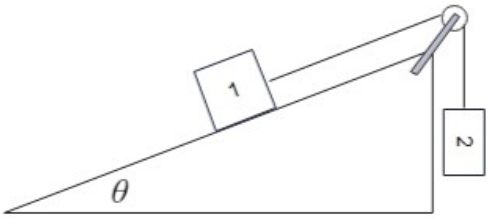
15. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless ramp and has a mass of 7 kg. Block 2's mass is 12 kg. The ramp is inclined at 45°. What is the acceleration of the system. Assume up the ramp to be positive.



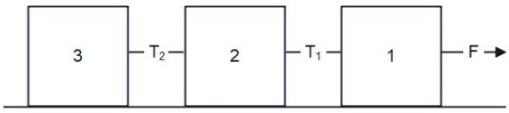
16. Three blocks attached by cords are pulled to the right by force F = 174 N. Block 1 has a mass of 29 kg, block 2 has a mass of 29 kg and block 3 has a mass of 17 kg. What is T_1?



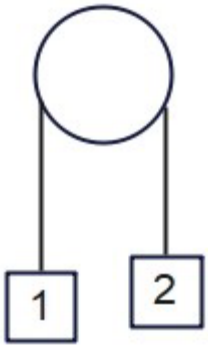
17. Blocks 1 and 2 are connected by a string over a pulley. Block 1 rests on a frictionless ramp and has a mass of 12.45 kg. Block 2's mass is 15 kg. The ramp is inclined at 14°. If block 2 is initially at rest and is 0.29 m above the floor then how many seconds does it take for it to reach the floor? Assume up the ramp to be positive.



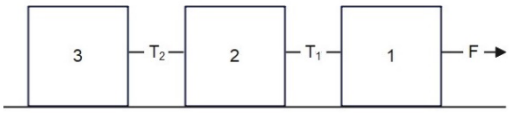
18. Three blocks attached by cords are pulled to the right by force F = 161 N. Block 1 has a mass of 27 kg, block 2 has a mass of 23 kg and block 3 has a mass of 18 kg. What is T_2?



19. In the Atwood's machine shown to the right M_1 = 29 kg and M_2 = 10 kg. If M_1 is initially 11 m from the floor, moving in the positive direction at 0.36 m/s, then how many seconds does it take for M_1 to reach the floor? [Counterclockwise rotation of the pulley is positive.]



20. Three blocks attached by cords are pulled to the right by force F = 161 N. Block 1 has a mass of 21 kg, block 2 has a mass of 29 kg and block 3 has a mass of 13 kg. What is T_1?



KEY

1. 47
2. 34.1
3. 74.7
4. 24.8
5. 54
6. 0
7. 2.09
8. 162.8
9. 8
10. 2.05
11. 28
12. 3.48
13. 1.46
14. 2.7
15. 3.64
16. 106.72
17. 0.37
18. 42.5
19. 2.07
20. 107.24