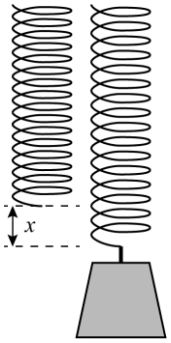
Worksheet 10: Hooke's law

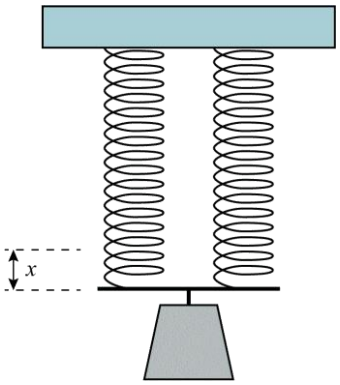
A spring stretches 4.0 cm when a load of 12.0 N is suspended from it.



1. What is the spring constant of the spring?

2. How far will the spring stretch with a tension of 6.0 N?

Two such springs are connected in parallel, and a 12.0-N weight is suspended from the pair.

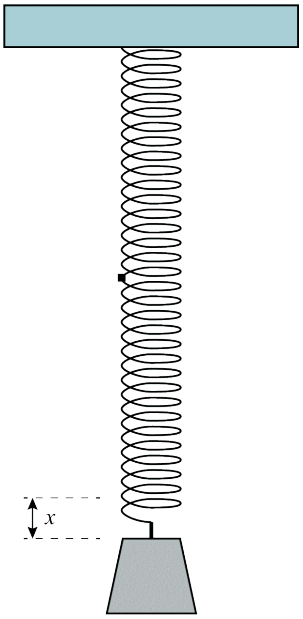


3. What is the tension in each spring when a 12-N weight is suspended from them?

4. How far will each spring stretch?

5. What is the spring constant of the combined springs?

Two such springs are connected in tandem, and a 12.0-N weight is suspended from the pair.



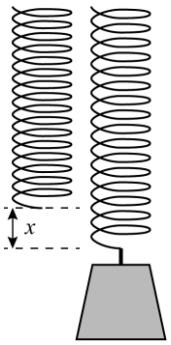
6. What is the tension in each spring when a 12-N weight is suspended from them?

7. How far will each spring stretch?

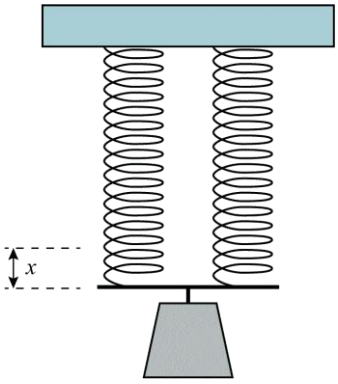
8. How far do the combined springs stretch?

9. What is the spring constant of the combined springs?

10. When the 12-N weight is suspended from a single spring which stretches 4.0 cm, what is the potential energy in the spring?



11. When the 12-N weight is suspended from the two springs in parallel, what is the total potential energy of the two springs?



12. When the 12-N weight is suspended from the two springs in tandem, what is the total potential energy of the two springs?