

Motion Worksheet #7 Key

1. The sum of all forces acting on the object.
2. It doubles.
3. It halves.
4. Directly – increasing one variable increases the other by the same factor. Inversely – increasing one variable decreases the other by the same factor.
5. Acceleration is directly proportional to net force, in the same direction as the net force, and inversely proportional to mass; $\vec{a} = \vec{\Sigma F}/m$.
6. 20 000 N
7. Friction always acts opposite to the direction of motion.
8. 100 N; zero net force; zero acceleration.
9. 0.25 m/s^2
10. 0.4 m/s^2
11. 10 m/s^2
12. 8 m/s^2
13. Proportional – a change in one quantity results in a corresponding change in the other.
Equal – when two quantities are equal, they are identical.
14. No, you can only conclude that the net force acting on it is zero.
15. 1 m/s^2
16. 4 m/s^2
17. 1.5 m/s^2
18. Net force is zero, because its acceleration is zero; 100 N.