

Physical Science Formula Review

1. Convert 2.3 kilometers to meters.
2. Convert 0.87 meters to millimeters.
3. Convert 30 milliliters to liters.
4. Convert 120 grams to kilograms.
5. If 2.54 cm equals 1 inch, how many centimeters equal 48 inches?
6. A carrot has a mass of 91.2 grams and a volume of 106.3 cm^3 . What is its density?
7. Granite has a density of 3.7 g/cm^3 . What is the mass of a 50 cm^3 granite rock?
8. A mouse runs 4.39 meters through a maze in 8 seconds. What is the average speed of the mouse?
9. A ball rolls forward 20 meters and then bounces off a wall and rolls back 8 meters. If it takes the ball 4 seconds to do this, what is the average velocity of the ball?
10. A car is traveling 15 meters per second. Five seconds later, it is traveling 18 meters per second. What is the acceleration of the car?
11. A truck pushes on a 500-kg box with a force of 300 Newtons. What is the acceleration of the box?
12. What is the weight (in Newtons) of a 20-kg bag of sugar?
13. A 5-kg ball is dropped off a bridge 200 meters above the ground below.
 - a. What is the ball's velocity after falling for 2 seconds?
 - b. How far does the ball fall in 2 seconds?
14. A 50-kilogram skier is at the top of a 60-meter tall hill. What is the gravitational potential energy of the skier?
15. When the skier goes down hill, what is his kinetic energy when his velocity is 6 meters per second?
16. You push a box 18 meters with a force of 20 Newtons. How much work did you do?
17. If it took you 12 seconds to push the box, how many Watts of power did you use?

18. A pool exerts a pressure of 600 Pascals over an area of 4 square meters. What is the weight of the pool?
19. A glass of water has a temperature of 35 degrees Celsius. What is the water's temperature in degrees Fahrenheit?
20. The hottest temperature recorded in Texas was 120°F in Seymour, Texas in 1936. What is this temperature in Celsius?
21. Liquid nitrogen has a temperature of -50°C. What is its temperature in Kelvin?
22. A lamp has a current of 1.5 amps and uses 110 Volts. What is the resistance of the lamp?
23. A drill uses 2.8 amps of current and 110 Volts. What is the wattage of the drill?
24. It takes 50 seconds for a race car to circle the track. What is the frequency of the car?
25. A wave travels at a speed of 90 meters per second. If it has a frequency of 1.5 Hertz, what is its wavelength?

FORMULAS GIVEN TO YOU ON THE FINAL

Density = Mass/Volume

Average speed = Distance ÷ Δ Time

Velocity = Displacement ÷ Δ Time

Acceleration = Δ Velocity ÷ Δ Time

Force = Mass x Acceleration

Gravity = 9.8 meters/seconds²

Weight = Mass x Gravity

Velocity (for free fall) = Gravity x Δ Time

Displacement (for free fall) = $\frac{1}{2}$ x Gravity x (Δ Time)²

Gravitational PE = Mass x Gravity x Height

Kinetic Energy = $\frac{1}{2}$ x Mass x Velocity²

Work = Force x Distance

Power = Work ÷ Time

Pressure = Force/Area

Celsius = $\frac{5}{9}(F - 32)$

Fahrenheit = $\frac{9}{5}C + 32$

Kelvin = C + 273

Voltage = Current x Resistance

Power = Current x Voltage

Frequency = 1/Time

Velocity = Wavelength x Frequency