Compound measures

Name - _ _ _ _ _ _ _ _ Start time - _ _ : _ _ End time - _ _ : _ _

Solve the following

1. The mass of a bathtub filled with water is 225 kg. Water has a density of 1000 kg/m^3. If the empty bathtub has a mass of 45 kg, what is the volume of water in the bathtub?

2. An object is resting with its base on horizontal ground. The area of the object's base is 20 cm^2 and the object weighs 60 N. What pressure is the object exerting on the ground?

3. A laptop with a base of 0.07 m^2 is resting on a desk and exerting a pressure of 330 Pa. How much does the laptop weigh?

4. Using the conversion 1 mile ≈ 1.6 km, what is 22 m/s in mph?

5. What is 20 kg/m^3 in g/cm^3?

6. It takes a high-speed train 25 minutes to travel 240 km. Calculate the average speed of the train in kilometres per hour to 3 significant figures.

7. If a skydiver falls at a terminal velocity of 120 mph for 16 seconds, how many miles do they fall? Give your answer to 2 s.f.

8. A cereal box is resting with its base on a horizontal surface. The weight of the box is 1.5 N and it exerts a pressure of 150 Pa on the surface. What is the area of the base of the box in cm^2?

9. For each of the following, use the formula for density, mass and volume to find the missing value.
   a) mass = 642 kg, volume = 0.05 m^3
   b) mass = 0.06 kg, volume = 0.025 m^3
   c) density = 42 kg/m^3, volume = 6.2 m^3

1 2 3 4 5 6 7 8 9