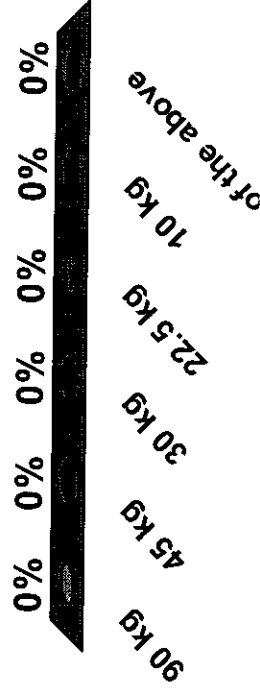
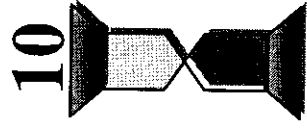


A satellite which weighs 900 N on earth is orbiting the earth at a fixed distance of $3 R_E$ from the earth's center. What is its mass at that point?

- ✓ a) 90 kg
- b) 45 kg
- c) 30 kg
- d) 22.5 kg
- e) 10 kg
- f) None of the above



The correct answer is a) 90 kg.

- If the object weighs 900 N on earth its mass is 90 kg. And the mass (but not its weight!) remains the same wherever the object goes and however it moves.
- The mass of an body is an intrinsic property of the body and does not change with position or state of motion.
- Its weight, however, is the gravitational force that it feels near some specified planet, and will vary from place to place (e.g., with height) and from planet to planet.