1. A rocket travels by the Earth at 0.5c. A woman on the rocket claps her hands twice, and the spacetime interval Δs between the claps is 20 seconds. In the Earth's frame, the spacetime interval between the claps is ___ 20 seconds.
   A) less than   B) equal to   C) greater than

2. At speeds v close to the speed of light, the momentum of a particle is ___ mv.
   A) less than   B) equal to   C) greater than

3. When a block of wood warms up, its mass
   A) increases   B) stays the same   C) decreases

4. True or false: a photon has momentum.
   A) true   B) false

5. Which of the following is the kinetic energy of a particle moving at speed u ≈ c?
   A) $\frac{1}{2}mu^2$ B) $\frac{1}{2}\gamma mu^2$ C) γmc^2 D) $(\gamma-1)mc^2$

6. True or false: in an inelastic collision, the total energy γmc^2 stays the same.
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5. Which of the following is the kinetic energy of a particle moving at speed u ≈ c?
A) **½mu²**   B) **½γmu²**   C) **γmc²**   **D) (γ–1)mc²**

6. True or false: in an inelastic collision, the total energy γmc^2 stays the same.
A) true   B) **false**