The Science of Circus Arts

Circus Arts · Answer Key · 10 Questions

1. Which physical principle allows a tightrope walker to maintain balance by lowering their center of gravity?

A) Centripetal force
B) Torque
C) Center of mass
D) Inertia

2. In aerial arts, what force pulls a performer back toward the ground when they let go of their equipment?

A) Gravity
B) Friction
C) Magnetism
D) Elasticity

3. When a spinning aerialist pulls their arms inward, their rotation speed increases due to which principle?

A) Conservation of angular momentum
B) Newton's third law
C) Thermal expansion
D) Sound waves

4. Which body system is primarily responsible for an acrobat's ability to maintain spatial orientation during flips?

A) Vestibular system
B) Digestive system
C) Endocrine system
D) Respiratory system

5. What is the primary force that prevents a juggler from catching an object indefinitely without movement?

A) Gravity
B) Nuclear force
C) Static electricity
D) Air pressure

6. What type of energy is stored in a compressed trampoline bed before it propels a performer into the air?

A) Elastic potential energy
B) Chemical energy
C) Nuclear energy
D) Magnetic energy

7. To reduce the friction between a rope and their skin, circus aerialists often use what type of substance?

A) Lubricating oils
B) Resin or chalk
C) Water
D) Polishing wax

8. What physical property describes the resistance of a performer's body to change its state of motion?

A) Inertia
B) Density
C) Volume
D) Surface tension

9. When a performer lands on a mat, the mat extends the duration of the impact, which reduces what?

A) The force of the impact
B) The height of the fall
C) The weight of the performer
D) The mass of the performer

10. Which force acts perpendicular to the surface of a tightrope, providing the upward support for the performer?

A) Normal force
B) Magnetic force
C) Buoyant force
D) Frictional force