

Mathematical Anatomy and Physiology

Pre-Algebra · Answer Key · 10 Questions

1. The human heart beats approximately 100,000 times a day. If the heart pumps 70 millilitres of blood per beat, how many litres does it pump in one week?

- A) 49,000 litres**
- B) 490 litres
- C) 4,900 litres
- D) 700,000 litres

2. A healthy human adult has approximately 5 litres of blood. If red blood cells make up about 45% of this volume, how many litres of blood are composed of plasma and other components?

- A) 2.25 litres
- B) 2.75 litres**
- C) 3.25 litres
- D) 1.75 litres

3. The small intestine is approximately 7 metres long. If you were to express this length in millimetres using scientific notation, which value is correct?

- A) 7×10^2 mm
- B) 7×10^3 mm**
- C) 7×10^4 mm
- D) 7×10^1 mm

4. A human brain weighs about 1.4 kilograms. If this represents approximately 2% of an average adult's total body mass, what is the total mass of the person in kilograms?

- A) 28 kg
- B) 70 kg**
- C) 56 kg
- D) 84 kg

5. Human skin replaces itself every 27 to 30 days. If a person sheds approximately 0.05 kilograms of skin cells per month, how many kilograms of skin would they shed in 3 years?

- A) 0.6 kg
- B) 1.8 kg**
- C) 1.5 kg
- D) 1.2 kg

6. An average human lung capacity is about 6 litres. If a person inhales and exhales 0.5 litres of air per breath at a rate of 12 breaths per minute, how many litres of air are exchanged in one hour?

- A) 300 litres
- B) 360 litres**
- C) 60 litres
- D) 120 litres

7. The human body contains about 206 bones at adulthood. If an infant is born with 270 bones, what is the percentage decrease in the number of bones by the time they reach adulthood, rounded to the nearest percent?

- A) 24%**
- B) 31%
- C) 19%
- D) 35%

8. A person loses approximately 50 to 100 hairs per day. If the average number is 75, how many hairs are lost in a leap year (366 days)?

- A) 27,450**
- B) 25,500
- C) 28,200
- D) 26,750

9. The average human body temperature is 37 degrees Celsius. Using the conversion formula $F = (C * 9/5) + 32$, what is this temperature in Fahrenheit?

- A) 97.4 F
- B) 98.6 F**
- C) 99.2 F
- D) 96.8 F

10. A human kidney filters about 180 litres of blood per day. If the total blood volume is 5 litres, how many times per day does the entire blood supply circulate through the kidneys?

- A) 36 times**
- B) 40 times
- C) 30 times
- D) 45 times