

Human Biology Algebra

Basic Algebra · Answer Key · 25 Questions

1. An adult human heart beats at an average rate of 72 beats per minute. If 'b' represents total beats in 'm' minutes, which equation represents this relationship?

A) $b = 72m$

B) $b = 72 + m$

C) $b = m / 72$

D) $b = 72 / m$

2. The average human body temperature is 37 degrees Celsius. To convert Celsius (C) to Fahrenheit (F), the formula is $F = 1.8C + 32$. What is the temperature in Fahrenheit?

A) 92.4

B) 98.6

C) 95.2

D) 101.4

3. A child's dose of medicine is calculated using the formula $D = (A / 24) * \text{Adult Dose}$, where A is the age in years. If the adult dose is 120mg, what is the dose for a 6-year-old?

A) 20mg

B) 30mg

C) 40mg

D) 60mg

4. The Body Mass Index (BMI) formula is $\text{BMI} = \text{weight}(\text{kg}) / \text{height}(\text{m})^2$. If a person weighs 70kg and is 1.75m tall, what is their BMI?

A) 22.86

B) 24.50

C) 20.00

D) 25.75

5. Human teeth are replaced by permanent ones. If a child has 20 baby teeth and 'p' permanent teeth grow in to replace them, with a total count of 32, what is 'p' in the equation $20 + x = 32$?

A) 10

B) 12

C) 14

D) 8

6. The volume of blood in an average adult is about 5 liters. If a person loses 500ml (0.5 liters), what is the remaining blood volume expressed as an equation where V is remaining volume?

A) $V = 5 + 0.5$

B) $V = 5 - 0.5$

C) $V = 5 * 0.5$

D) $V = 5 / 0.5$

7. Daily water intake recommendation is approximately 2.5 liters. If a person drinks 'x' liters before noon and 1.5 liters after noon, what equation finds 'x'?

A) $x + 1.5 = 2.5$

B) $x - 1.5 = 2.5$

C) $x * 1.5 = 2.5$

D) $x / 1.5 = 2.5$

8. A red blood cell survives for about 120 days. If 'd' is the number of days, how many cells are produced per day if 200 billion are produced in 1 day?

A) 200 billion / d

B) 200 billion * d

C) $120 * d$

D) $120 / d$

9. The human skeletal system contains 206 bones in an adult. If the skull has 22 bones, how many bones 'b' are in the rest of the body?

A) $b = 206 + 22$

B) $b = 206 - 22$

C) $b = 206 * 22$

D) $b = 206 / 22$

10. A person breathes about 16 times per minute. If 'b' is total breaths in one hour (60 minutes), calculate 'b'.

A) 720

B) 960

C) 840

D) 1020

11. If a protein shake has 25g of protein per serving and you need 100g daily, how many servings 's' do you need? Solve $25s = 100$.

A) 2

B) 3

C) 4

D) 5

12. The average rate of human hair growth is 1.25 cm per month. If 'h' is growth in 'm' months, which expression represents the total growth?

A) $1.25 + m$

B) $1.25m$

C) $m / 1.25$

D) $1.25 / m$

13. There are approximately 100,000 hairs on an average human scalp. If 100 are lost per day, what is the equation for the remaining hair 'R' after 'd' days?

A) $R = 100,000 + 100d$

B) $R = 100,000 - 100d$

C) $R = 100,000 * 100d$

D) $R = 100,000 / 100d$

14. The human eye blinks about 15,000 times a day. If 'b' is total blinks in 'd' days, what is the formula?

A) $b = 15,000 * d$

B) $b = 15,000 / d$

C) $b = 15,000 + d$

D) $b = 15,000 - d$

15. A person walking at a moderate pace burns 5 calories per minute. How many minutes 'm' are needed to burn 200 calories? Solve $5m = 200$.

A) 20

B) 30

C) 40

D) 50

16. The small intestine is approximately 6 meters long. If the large intestine is 1.5 meters long, what is the total length 'L' in meters?

A) $L = 6 / 1.5$

B) $L = 6 * 1.5$

C) $L = 6 + 1.5$

D) $L = 6 - 1.5$

17. Human skin replaces itself every 27 days. In 108 days, how many 'c' complete cycles occur? Solve $27c = 108$.

A) 3

B) 4

C) 5

D) 6

18. A neuron transmits signals at 100 meters per second. In 't' seconds, what distance 'd' does the signal travel?

A) $d = 100t$

B) $d = 100 + t$

C) $d = 100 / t$

D) $d = t / 100$

19. If 1 gram of fat contains 9 calories, how many grams of fat 'g' are in a meal with 180 fat calories? Solve $9g = 180$.

A) 10

B) 15

C) 20

D) 25

20. The human body is about 60% water. If a person weighs 80kg, what is the weight of the water 'w'? Solve $w = 0.60 * 80$.

A) 42kg

B) 48kg

C) 50kg

D) 52kg

21. A muscle cell contains many mitochondria. If each cell has 'm' mitochondria and there are 500 cells, the total count is 50,000. Find 'm'.

A) 50

B) 100

C) 200

D) 500

22. An average adult inhales 0.5 liters of air per breath. How many breaths 'b' are needed to inhale 10 liters? Solve $0.5b = 10$.

A) 10

B) 15

C) 20

D) 25

23. The human heart pumps 5 liters of blood per minute. How many liters 'L' are pumped in 24 hours (1440 minutes)?

A) 7,200

B) 6,000

C) 8,400

D) 9,600

24. If a human fingernail grows 3mm per month, how many months 'm' to grow 15mm? Solve $3m = 15$.

A) 3

B) 4

C) 5

D) 6

25. The body loses 0.7 liters of water through skin evaporation daily. How much 'w' is lost in one week (7 days)?

A) 4.2

B) 4.9

C) 5.6

D) 6.3