

Pre-Algebra: Nature's Numbers

Pre-Algebra · Answer Key · 19 Questions

1. The average lifespan of a giant panda is approximately 20 years in the wild. If a panda lives for 2 decades, how many years is that?

- A) 10 years
- B) 20 years**
- C) 100 years
- D) 200 years

2. A mature blue whale can weigh up to 150 tonnes. If 1 tonne is equal to 1000 kilograms, what is the maximum weight of a blue whale in kilograms?

- A) 150 kg
- B) 1,500 kg
- C) 15,000 kg
- D) 150,000 kg**

3. The Amazon rainforest covers approximately 5.5 million square kilometers. If a small protected area within it is 5,500 square kilometers, what fraction of the total Amazon rainforest does this area represent?

- A) $\frac{1}{10}$
- B) $\frac{1}{100}$
- C) $\frac{1}{1,000}$**
- D) $\frac{1}{10,000}$

4. A typical monarch butterfly migrates up to 4,800 kilometers. If a butterfly travels at an average speed of 30 kilometers per hour, how many hours would it take to cover this distance?

- A) 16 hours
- B) 160 hours**
- C) 1,600 hours
- D) 16,000 hours

5. The Great Barrier Reef is approximately 2,300 kilometers long. If a segment of the reef is 1,150 kilometers, what percentage of the total length does this segment represent?

- A) 25%
- B) 50%**
- C) 75%
- D) 100%

6. A single mature oak tree can absorb about 22 kilograms of carbon dioxide per year. To absorb 440 kilograms of carbon dioxide, how many such oak trees would be needed?

- A) 10 trees
- B) 20 trees**
- C) 22 trees
- D) 44 trees

7. The average speed of a cheetah is about 100 kilometers per hour. If a cheetah runs for 0.25 hours, what distance does it cover?

- A) 25 km**
- B) 50 km
- C) 75 km
- D) 100 km

8. A droplet of water contains approximately 3.34×10^{21} molecules. If scientists are studying 2 droplets, how many molecules are they studying in scientific notation?

- A) 3.34×10^{21} molecules
- B) 6.68×10^{21} molecules**
- C) 3.34×10^{42} molecules
- D) 6.68×10^{42} molecules

9. The population of Emperor penguins on an island is estimated to be 200,000. If the population decreases by 10%, how many penguins are lost?

- A) 2,000 penguins
- B) 10,000 penguins
- C) 20,000 penguins**
- D) 180,000 penguins

10. A tidal wave can travel at speeds of up to 800 kilometers per hour. If a tidal wave travels for 3.5 hours, what distance does it cover?

- A) 280 km
- B) 560 km
- C) 2,800 km**
- D) 28,000 km

11. The average depth of the ocean is about 3,688 meters. If a submersible reaches a depth of 1,844 meters, what percentage of the average ocean depth has it reached?

- A) 25%
- B) 50%**
- C) 75%
- D) 100%

12. A redwood tree can grow to a height of over 100 meters. If a redwood tree has grown 75% of its potential height, how tall is it?

A) 75 meters

B) 80 meters

C) 85 meters

D) 90 meters

13. The human population is approximately 8 billion. If the wild tiger population is about 3,900, what is the ratio of humans to tigers?

A) 1:200,000

B) 2,000:1

C) 200,000:1

D) 8,000,000:1

14. A desert can experience extreme temperature fluctuations. If the daytime temperature is 45°C and the nighttime temperature is -5°C, what is the difference between the two temperatures?

A) 40°C

B) 45°C

C) 50°C

D) 55°C

15. The average rainfall in a rainforest is about 2,000 millimeters per year. If it rained 500 millimeters in one month, what fraction of the annual rainfall did it receive that month?

A) 1/4

B) 1/2

C) 3/4

D) 1/10

16. A group of wolves has a territory of 250 square kilometers. If they hunt an area that is 0.5 times their territory, how large is the hunting area?

A) 100 sq km

B) 125 sq km

C) 150 sq km

D) 200 sq km

17. The speed of light in a vacuum is approximately 299,792 kilometers per second. Rounded to the nearest thousand, what is this speed?

- A) 299,000 km/s
- B) 300,000 km/s**
- C) 299,790 km/s
- D) 299,800 km/s

18. A coral polyp reproduces by budding, and a new polyp grows. If a colony starts with 5 polyps and each polyp doubles every month, how many polyps will there be after 3 months?

- A) 15 polyps
- B) 20 polyps
- C) 30 polyps
- D) 40 polyps**

19. The average time it takes for plastic to decompose is estimated to be around 450 years. If a plastic bottle is buried, what is the value of 450 expressed in hundreds?

- A) 4.5**
- B) 45
- C) 450
- D) 4,500