

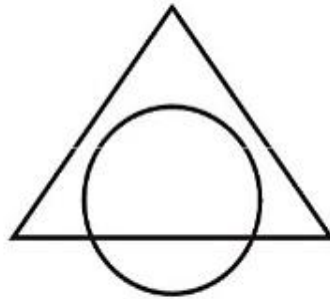
1. In my office, there are two clocks. One clock gains one minute every hour and the other loses two minutes every hour. Yesterday I set them both to the correct time but when I looked at them today, I saw that the time shown on one was 11:00 and shown on the other was 12:00. What time was it when I set the two clocks?

(A) 23:00 (B) 19:40 (C) 15:40
(D) 14:00 (E) 11:20

2. There are 2022 kangaroos and some koalas living across seven parks. In each park the number of kangaroos is equal to the total number of koalas in all the other parks. How many koalas live in the seven parks in total?

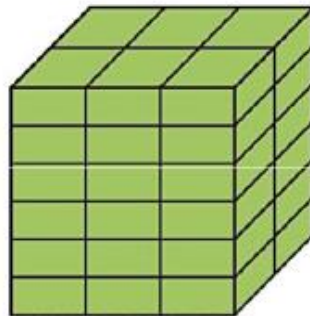
(A) 288 (B) 337 (C) 576
(D) 674 (E) 2022

3. The area of the intersection of a circle and a triangle is 45% of the area of their union. The area of the triangle outside the circle is 40% of the area of their union. What percentage of the circle lies outside the triangle?



(A) 20% (B) 25% (C) 30%
(D) 35% (E) 50%

4. Rob the Builder has a brick whose shortest side is 4 cm. He uses several such bricks to build the cube shown. What are the dimensions, in cm, of his brick?



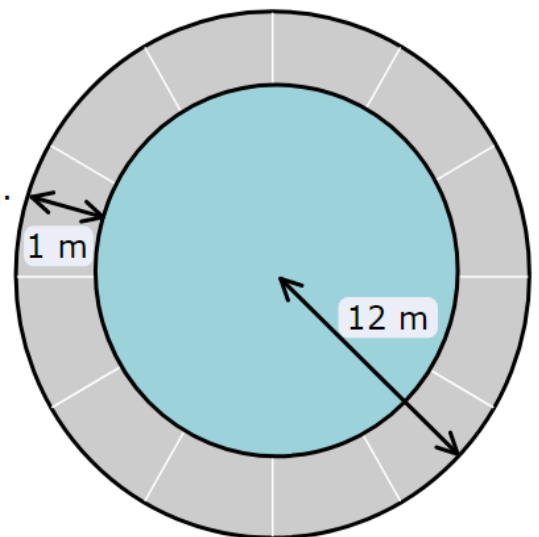
(A) $4 \times 6 \times 12$ (B) $4 \times 6 \times 16$ (C) $4 \times 8 \times 12$
(D) $4 \times 8 \times 16$ (E) $4 \times 12 \times 16$

9. This pool is surrounded by a border path.

It is claimed that 120 people can sit around the water to enjoy the sunshine.

Each sunbather takes up 55 cm around the pool.

Is possible for this many people to be seated?



- A) Yes, there is enough space for 120 people.
- B) No, the available space allows fewer than 120 people.
- C) No, the available space allows more than 120 people.
- D) Not enough information is provided to determine.

Science:

1. **Water has unique properties that make it essential for life. Which of the following characteristics of water contributes to its role as the "universal solvent"?**
 - a) Its ability to expand when frozen
 - b) Its ability to dissolve many substances due to its polarity
 - c) Its neutral pH level
 - d) Its ability to evaporate quickly
2. **Scientists study Mars, the "Red Planet," to understand planetary evolution. What evidence suggests that Mars may have once supported life?**
 - a) Its large volcanoes and deep canyons
 - b) The presence of frozen water and river-like structures on its surface
 - c) Its thin atmosphere, rich in carbon dioxide
 - d) The existence of strong dust storms
3. **Plants use photosynthesis to produce food. How does this process contribute to the balance of gases in Earth's atmosphere?**
 - a) It increases carbon dioxide levels by absorbing oxygen
 - b) It releases oxygen while removing carbon dioxide from the air
 - c) It maintains a constant nitrogen level
 - d) It produces glucose but does not affect atmospheric gases
4. **Despite being essential for life, oxygen is not the most abundant gas in the atmosphere. What is the main reason nitrogen makes up about 78% of the air we breathe?**
 - a) It is chemically stable and does not easily react with other gases
 - b) Plants and animals require nitrogen more than oxygen
 - c) It is heavier than oxygen, so it accumulates in the atmosphere
 - d) It is constantly released by volcanic eruptions
5. **Understanding electric current is crucial for designing safe electrical systems. Why is the ampere (A) used as the standard unit for measuring electric current?**
 - a) It measures the resistance of a conductor

- b) It quantifies the rate at which electric charge flows in a circuit
 - c) It represents the voltage difference across a circuit
 - d) It determines the amount of electrical power used
6. **The heart plays a critical role in the circulatory system. What would happen if the heart stopped functioning properly?**
- a) The body would stop producing oxygen
 - b) Nutrients and oxygen would not reach body cells efficiently
 - c) The lungs would take over the function of pumping blood
 - d) The liver would compensate by filtering more blood
7. **Diamond is the hardest known natural substance. What property of its atomic structure makes it so strong?**
- a) Its atoms are loosely connected, allowing flexibility
 - b) Its carbon atoms form a rigid, tetrahedral structure
 - c) It is composed of metal and non-metal elements
 - d) It contains traces of iron that make it strong
8. **As the world shifts towards sustainable energy, why is solar energy considered a better alternative to fossil fuels?**
- a) It is easy to store and transport
 - b) It is non-renewable but cheaper to produce
 - c) It does not produce harmful greenhouse gases
 - d) It generates more energy than all other sources combined
9. **Water's freezing point is 0°C under normal conditions. How can this freezing point be altered?**
- a) By increasing the water's pH level
 - b) By adding impurities like salt, which lower the freezing point
 - c) By exposing the water to direct sunlight
 - d) By increasing atmospheric oxygen levels
10. **Plants rely on their root systems to absorb water and nutrients. How do plants in dry environments adapt their roots for survival?**
- a) They grow shorter roots to conserve energy
 - b) They develop deep or widespread root systems to maximize water absorption
 - c) They use their leaves instead of roots to absorb water
 - d) They stop photosynthesis to reduce water loss
11. **Sodium (Na) is a highly reactive metal, and chlorine (Cl) is a poisonous gas. Why does their combination form a harmless compound, table salt (NaCl)?**
- a) The two elements cancel each other's properties
 - b) They form a stable ionic bond that neutralizes their reactivity
 - c) Chlorine loses its toxicity when exposed to sodium
 - d) Sodium is stronger than chlorine, making the compound safe
12. **Gravity is responsible for keeping planets in orbit. How would life on Earth be different if gravity were significantly weaker?**
- a) Oceans would become deeper due to reduced atmospheric pressure
 - b) Objects would fall to the ground at a much faster rate
 - c) Buildings and human structures would not be stable
 - d) People and objects would have difficulty staying grounded
13. **A car accelerates from 0 to 60 km/h in 10 seconds. What factors could improve the car's acceleration while maintaining safety?**
- a) Increasing the car's weight for better traction
 - b) Using a more powerful engine and improving aerodynamics
 - c) Reducing the amount of fuel used per second
 - d) Increasing the car's tire pressure beyond recommended levels

Instructions: Choose the most appropriate answer for each question. Each question carries 1 mark.

1. **The Great Wall of China is one of the most famous historical structures. What was its primary purpose?**
 - a) To improve trade between different regions
 - b) To prevent invasions and protect Chinese territories
 - c) To serve as a road connecting various cities
 - d) To divide different cultural groups within China
2. **Paris is known as the capital of France and a major global city. How has its geographical location influenced its historical significance?**
 - a) It is located near the Mediterranean, making it a major naval power
 - b) Its central location in Europe has made it a hub for politics, trade, and culture
 - c) It is surrounded by natural barriers that have kept it isolated
 - d) It has historically been difficult to access, limiting its influence
3. **Oceans play a crucial role in regulating Earth's climate. Why is the Pacific Ocean considered the largest and most significant?**
 - a) It covers the most surface area and contains the deepest trenches
 - b) It has the highest number of marine species
 - c) It is the warmest ocean on Earth
 - d) It has the strongest ocean currents
4. **"Romeo and Juliet" is one of Shakespeare's most famous plays. How does the theme of fate influence the story's tragic outcome?**
 - a) The characters make rational decisions, but fate intervenes
 - b) The story suggests that love is stronger than destiny
 - c) The tragic events are a result of personal choices, not fate
 - d) The role of fate is exaggerated and has no real impact on the plot
5. **The Nile River is often considered the longest river in the world. Why has it been historically important to civilization?**
 - a) It provided a natural barrier against invasions
 - b) It offered fertile land for agriculture, supporting early civilizations
 - c) It was used mainly for transportation rather than farming
 - d) It connected multiple continents for international trade
6. **Japan is an economic powerhouse with a unique currency system. What factors influence the value of the Japanese yen in the global market?**
 - a) The country's reliance on agriculture
 - b) Its technological advancements and global trade policies
 - c) The influence of the European Union on its economy
 - d) Japan's military power and land size
7. **Australia is the smallest continent but has diverse geographical features. How does its isolation affect its biodiversity?**
 - a) It limits the number of native plant and animal species
 - b) It results in unique species that are not found anywhere else
 - c) It prevents natural disasters such as wildfires
 - d) It has led to fewer human settlements due to extreme weather
8. **The invention of the telephone revolutionized communication. What was the most significant impact of Alexander Graham Bell's invention?**
 - a) It replaced the use of handwritten letters entirely
 - b) It led to the development of the internet and mobile phones
 - c) It helped only businesses communicate over long distances
 - d) It made face-to-face communication unnecessary

9. **Venus is often called the "Morning Star" because of its brightness. What makes Venus appear so bright in the sky?**
 - a) It is the closest planet to the Sun
 - b) Its thick atmosphere reflects a large amount of sunlight
 - c) It produces its own light, like a star
 - d) It has a strong magnetic field that enhances its brightness
 10. **Canada is known for its passion for ice hockey. How has the climate influenced the popularity of this sport?**
 - a) The long and harsh winters provide natural conditions for ice sports
 - b) Canada has fewer indoor sports facilities
 - c) It was introduced as a national policy by the government
 - d) The sport originated from indigenous games played on land
 11. **Deserts are often thought of as hot, sandy regions, but the Antarctic Desert is the largest. What defines a desert, regardless of temperature?**
 - a) Its lack of plant and animal life
 - b) The amount of precipitation it receives annually
 - c) Its high temperatures and sandy terrain
 - d) The presence of only a few rivers and lakes
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English:

Passage

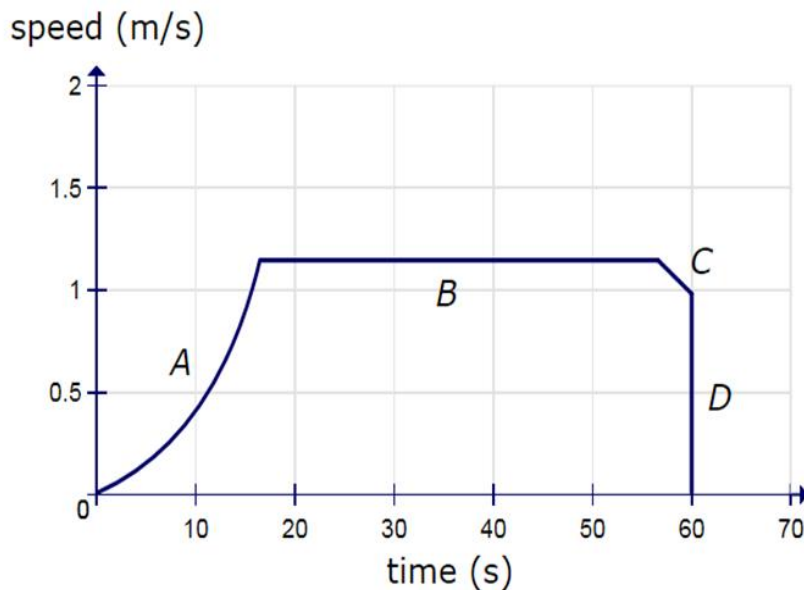
"The sun was setting, casting a golden glow over the horizon. The waves gently lapped against the shore, and the cool breeze carried the scent of salt and seaweed. A lone fisherman sat on the rocks, patiently waiting for his catch. It was a moment of perfect tranquility."

1. **The passage describes a serene moment by the sea. How does the imagery of the setting contribute to the overall theme?**
 - a) It highlights the fisherman's struggle to catch fish.
 - b) It emphasizes the beauty and peacefulness of nature.
 - c) It warns about the unpredictability of the sea.
 - d) It creates a sense of urgency and excitement.
2. **The passage evokes a certain emotion in the reader. Which aspect of the description primarily contributes to this mood?**
 - a) The reference to the fisherman's patience
 - b) The mention of the cool breeze and gentle waves
 - c) The idea of waiting for an uncertain outcome
 - d) The reference to salt and seaweed
3. **The phrase "casting a golden glow" creates a vivid image. What effect does this have on the reader?**
 - a) It makes the scene feel warm and peaceful.
 - b) It suggests that the sun is dangerously hot.
 - c) It implies that the day is just beginning.
 - d) It indicates that a storm is approaching.
4. **The fisherman is described as waiting patiently. What can be inferred about his character based on this detail?**
 - a) He enjoys solitude and finds peace in nature.
 - b) He is frustrated by his lack of success.
 - c) He is determined to catch a large fish quickly.
 - d) He dislikes the unpredictability of fishing.

5. **The phrase "the waves gently lapped against the shore" gives human-like qualities to the waves. What literary device is being used here?**
 - a) Simile, because it compares waves to a living thing.
 - b) Metaphor, because the waves are described as something else.
 - c) Personification, because the waves are given human-like actions.
 - d) Hyperbole, because it exaggerates the movement of the waves.
 6. **The word "tranquility" is used to describe the moment. How does this word choice affect the overall meaning of the passage?**
 - a) It conveys a sense of peace and calmness.
 - b) It suggests the presence of hidden dangers.
 - c) It implies that the fisherman is feeling lonely.
 - d) It makes the setting seem mysterious and eerie.
 7. **The fisherman waits "patiently" for his catch. Why is patience an important quality for a fisherman?**
 - a) Fish are easy to catch, but they require special techniques.
 - b) Fishing involves waiting, which requires calmness and persistence.
 - c) Patience helps fishermen make their fishing nets stronger.
 - d) Fishing is always quick and easy, so patience is unnecessary.
 8. **In the passage, the waves are described as "gentle." How would changing this word to "harsh" alter the meaning of the passage?**
 - a) It would create a sense of danger and turbulence.
 - b) It would make the setting seem even more peaceful.
 - c) It would emphasize the fisherman's enjoyment of the waves.
 - d) It would suggest that the waves are barely moving.
 9. **The passage describes a specific place with key sensory details. How does the setting influence the overall mood?**
 - a) The beach setting creates a sense of calm and relaxation.
 - b) The beach setting highlights the fisherman's struggles.
 - c) The setting adds tension and conflict to the story.
 - d) The mountain scenery creates a feeling of isolation.
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10. This speed time graph shows the speed a person is walking as time goes on.

Describe what the person is doing in each of the sections *A*, *B*, *C* and *D*.



What is happening in section A?

- A) The person is standing still.
- B) The person is accelerating from rest.
- C) The person is walking at a constant speed.
- D) The person is slowing down.

What is happening in section B?

- A) The person is moving at a constant speed.
- B) The person is accelerating.
- C) The person is decelerating.
- D) The person has stopped moving.

What is happening in section C?

- A) The person stops moving.
- B) The person slows down gradually.

- C) The person increases speed suddenly.
- D) The person increases speed slightly.

What is happening in section D?

- A) The person comes to a stop.
- B) The person speeds up.
- C) The person walks at a steady pace.
- D) The person runs faster.

Science

1.

You shine a flashlight in your friend's eye and observe the pupil constrict. Which characteristic of living things have you observed?



Living things are made of cells.



Living things reproduce.



Living things grow and develop.



Living things respond to stimuli in the environment.

2.