



SMART CHALLENGERS

SMART CHALLENGERS QUESTIONS – APRIL 2025

1. The letter below appeared in an Australian newspaper in 1997. Refer to the letter to answer the questions below.

from Arnold Jago

Did you know that in 1996 we spent almost the same amount on chocolate as our Government spent on overseas aid to help the poor?

Could there be something wrong with our priorities?

What are you going to do about it?

Yes, you.

**Arnold Jago,
Mildura**

a) Arnold Jago's aim in the letter is to provoke

A	Guilt
B	Amusement
C	Fear
D	Satisfaction

b) What kind of response or action do you think Arnold Jago would like his letter to prompt?

A	Government/individuals should spend less on (overseas) aid.
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B	Government/individuals should spend more on chocolates.
C	Government/individuals should change their priorities or awareness.
D	Government/individuals should not change their priorities or awareness.

3. Read the text below and answer the questions.

We ruin rain forests because there is oil under them, put mines in sacred ground for the sake of uranium. Would we also ruin another planet for the sake of an answer to problems of our own making? Of course!

Space exploration strengthens the dangerous belief that human problems can be solved by our ever-increasing domination of the environment. Human beings will continue to feel at liberty to abuse natural resources like rivers and rain forests if we know there is always another planet around the corner waiting to be exploited.

We have done enough damage on Earth. We should leave outer space alone.

Dieter

a) Which of the following questions does the student seem to be responding to?

A	What is the major problem facing the world today?
B	Are you in favour of space exploration?
C	Do you believe in life beyond our planet?
D	What recent advances have there been in space research?

b) Which of the following is a potential counterargument to the writer's claims?

A	Space exploration could provide new resources that reduce pressure on Earth's environment.
B	Space travel has no impact on Earth's environmental issues.
C	Space exploration is only about scientific curiosity, not resource extraction.
D	Humans will never be able to colonize other planets.

5. Rearrange the jumbled sentences into a meaningful paragraph.

A. While some still prefer the feel of a printed book, many appreciate the convenience of carrying an entire library in their pocket.

B. For centuries, people have relied on physical books as a primary source of knowledge and entertainment.

C. This shift has transformed reading habits, making literature more accessible than ever before.

D. With the rise of digital platforms, books can now be accessed instantly on e-readers and mobile devices.

A	ACDB
B	ADBC
C	DBCA
D	BDAC

6. State the figure of speech used in the sentence.

The press is questioning the government's new policy.

A	metaphor
B	metonymy
C	hyperbole
D	simile

7. To 'rake someone over the coals' means:

A	To praise someone excessively.
B	To criticize or reprimand someone harshly.
C	To forgive someone for their mistakes.
D	To celebrate someone's achievements.

8. A cube with side length 5 cm is painted red. It is then cut into smaller cubes with side length 1 cm. How many of the smaller cubes have exactly two red faces?

A	12
B	24
C	36
D	48

9. A rectangle has a length of 12 cm and a width of 8 cm. If the length is increased by 25% and the width is decreased by 25%, how does the area change?	
A	Increases
B	Decreases
C	Stays the same
D	Cannot be determined
10. The average age of three siblings is 15 years. If the youngest sibling is 10 years old, and the oldest sibling is twice as old as the middle sibling, how old is the oldest sibling?	
A	18
B	20
C	22
D	24
11. An investment earns 5% simple interest per year. How many years will it take for the investment to double?	
A	10 years
B	15 years
C	20 years
D	25 years
12. Zed Island is embarking on a journey towards sustainability by harnessing the power of wind through wind turbines along its coastline, where the winds are strong and consistent. The power output of a wind turbine is directly proportional to the cube of its wind speed. A wind turbine generates 500 kW of power at a wind speed of 30 km/h. What is the wind speed (to the nearest km/h) required to produce 800 kW?	
A	30 km/h
B	35 km/h

C	48km/h
D	60km/h

13. The number of red marbles and the total number of marbles in each jar are given in the table below.

Jar	Number of red marbles	Total number of marbles
A	1	10
B	1	100
C	10	100
D	10	1000

Lydia puts her hand into each of the jars to pick a marble without looking. Which jar(s) is/are Lydia most likely to pick a red marble from?

A	Jar A
B	Jar B
C	Jar C
D	Jar D

14. The vertical farm uses 30 square metres of land space to produce 2 tonnes of lettuce per year. A standard rooftop in Zedland has a usable area of approximately 100 square metres. Assuming all the space is used for vertical farming, calculate the potential yield (tonnes of lettuce) per year.

A	5.67 tonnes
B	6.67 tonnes
C	7.67 tonnes
D	8.67 tonnes

15. A **strong acid** is different from a **weak acid** because:

A	It has a lower pH
B	It fully dissociates in water
C	It reacts with all metals

D	It contains more hydrogen atoms
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16. Why do astronauts experience muscle atrophy during long space missions?	
A	The lack of gravity reduces the need for muscles to support body weight.
B	Space radiation damages muscle tissue directly.
C	Their diet in space lacks enough protein.
D	The cold temperatures in space freeze muscle tissue.

17. In a game of soccer, a player kicks a stationary ball, causing it to accelerate. If a second player, wearing proper safety equipment such as shin guards and cleats, attempts to block the ball by colliding with it, which of the following best explains the role of momentum and the importance of safety equipment in this scenario?	
A	The ball's momentum will always be conserved, and the final direction and speed of the ball will only depend on the velocity and mass of the ball, regardless of the player's safety equipment.
B	The ball's momentum will be transferred between the players, and the final direction and speed will depend on both the velocities and masses of the ball and the second player. Safety equipment, such as shin guards, helps to reduce injury but does not affect momentum.
C	The ball's final momentum will depend on the force exerted by the first player, and safety equipment is irrelevant to the transfer of momentum, as it only prevents injuries during the collision.
D	The ball's momentum will be determined only by the force applied by the second player, while safety equipment, like shin guards and cleats, will prevent injury but have no effect on the ball's final speed or direction.

18. Which of the following factors is <i>most likely</i> to contribute to long-term sustainable economic growth in a country?	
A	A) A temporary increase in government spending on infrastructure
B	B) A significant rise in consumer debt levels

C	C) Investment in education and technological innovation
D	D) A short-term boom in commodity export

19. Which one of the following job roles is most likely to be associated with capital-intensive production?	
A	Hairdresser
B	Car assembly worker
C	Soft fruit picker
D	Chef

20. Which of the following is NOT an example of system software?	
A	Operating System
B	Compiler
C	Microsoft Excel
D	Device Drive

21. "The arc of the moral universe is long, but it bends toward justice." Was said by...	
A	CONFUCIOUS
B	PLATO
C	MARTIN LUTHER KING, JR.
D	JOHN F KENNEDY