

Grade 6 Unit Practice Test

Science

Air, Aerodynamics,
and Flight

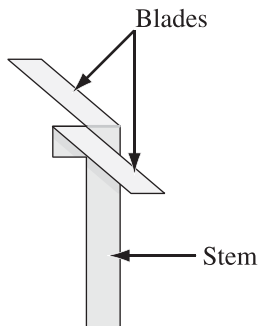
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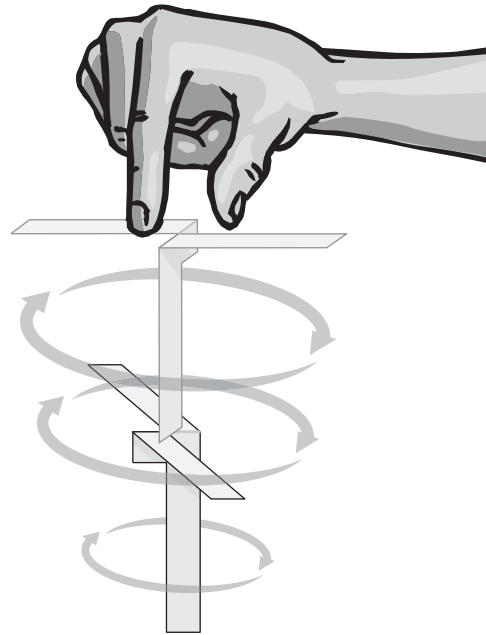
Use the following information to answer question 1.

A paper rotor is made by cutting and folding paper.

Paper Rotor at Rest



Paper Rotor in Motion



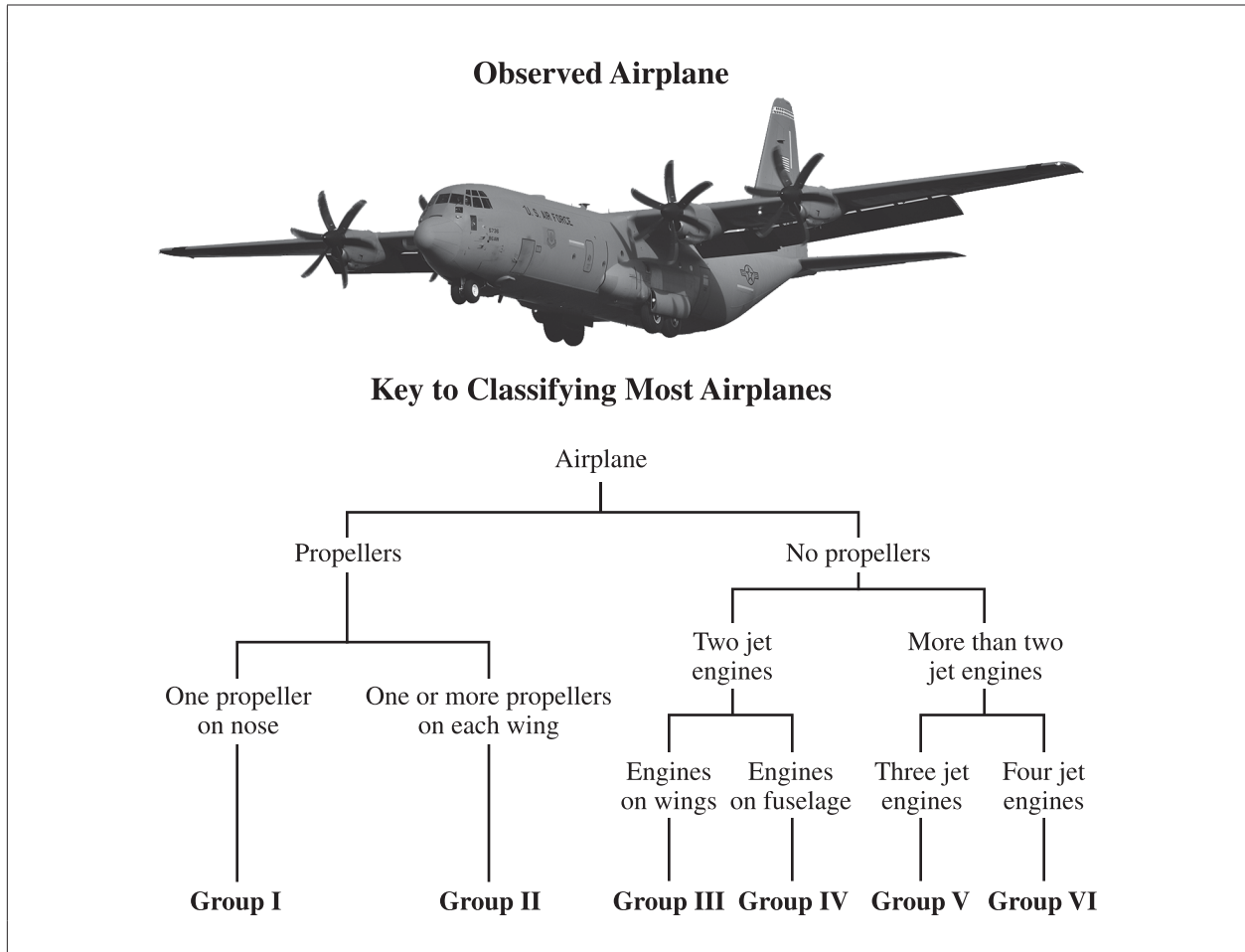
1. Which force causes the downward movement of the paper rotor?

- A. Lift
 - B. Drag
 - C. Thrust
 - D. Gravity
-

2. Which of the following examples **most clearly** demonstrates the compression of air?

- A. Flying a kite
- B. Inflating a tire
- C. Blowing out a candle
- D. Using a vacuum cleaner

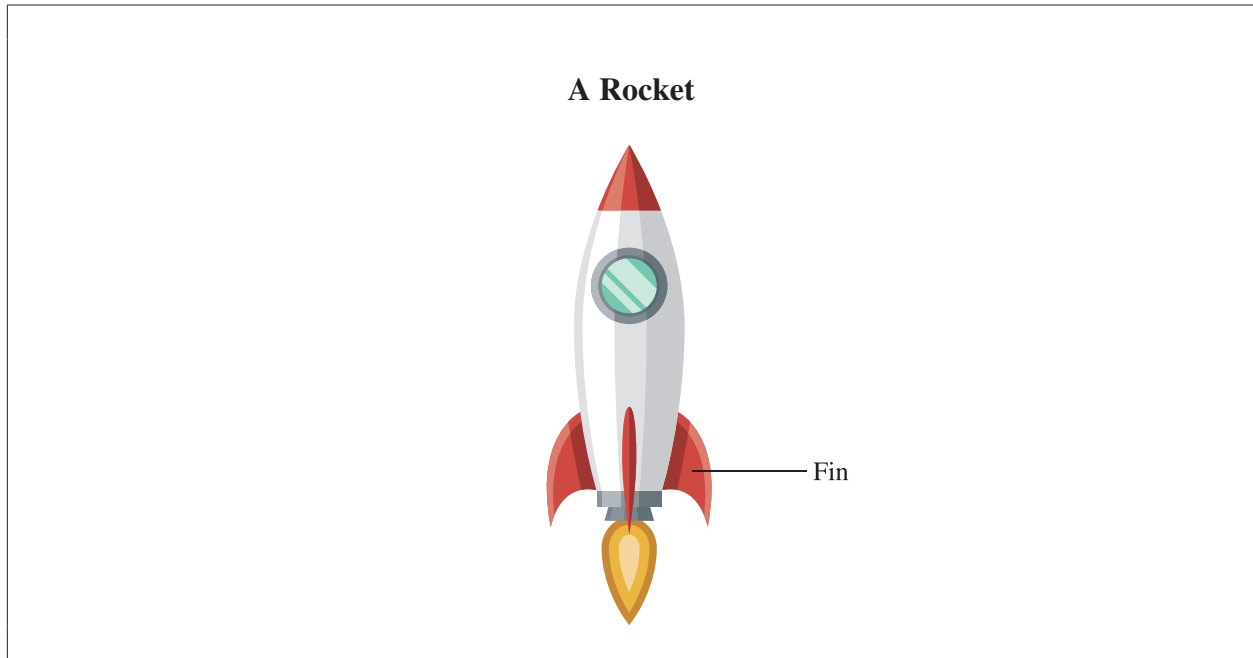
Use the following information to answer question 3.



3. The observed airplane should be classified as part of

- A. Group I
- B. Group II
- C. Group III
- D. Group VI

Use the following information to answer question 4.



4. The function of the fins on the rocket is to
- A. reduce drag
 - B. generate lift
 - C. provide stability
 - D. streamline shape

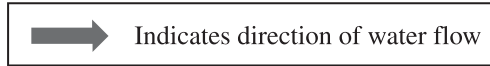
Use the following information to answer question 5.

The chart below lists the results of an experiment with parachutes.

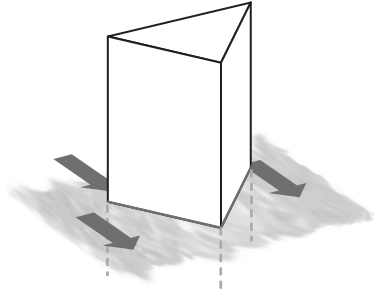
Parachute	Length of Shroud Lines (cm)	Size of Hole in Canopy (cm)	Number of Paperclips Used as Weight	Time to Reach Ground (s)
1	24	0.5	4	18
2	24	0.5	6	16
3	24	0.5	8	14
4	24	0.5	10	12

5. Which of the following conclusions is supported by the information above?
- A. The larger the hole in the canopy, the slower the parachute will descend.
 - B. The length of the shroud lines has little effect on a parachute's rate of descent.
 - C. Parachutes descend more slowly as the number of paperclips attached to them increases.
 - D. Parachutes descend faster as the number of paperclips attached to them increases.
-
6. Parachutes cause objects to fall to the ground more slowly because they
- A. increase drag
 - B. decrease lift
 - C. increase gravity
 - D. decrease propulsion

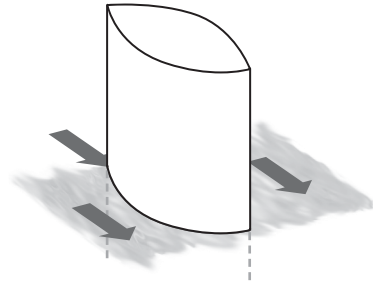
7. Which of the following shapes is expected to offer the **least** resistance to the flow of water?



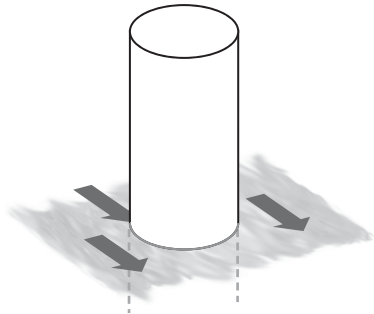
A.



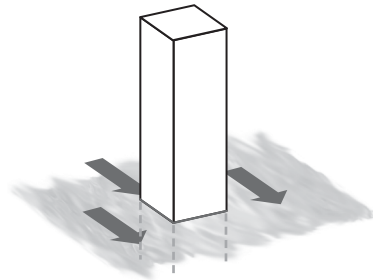
B.



C.



D.

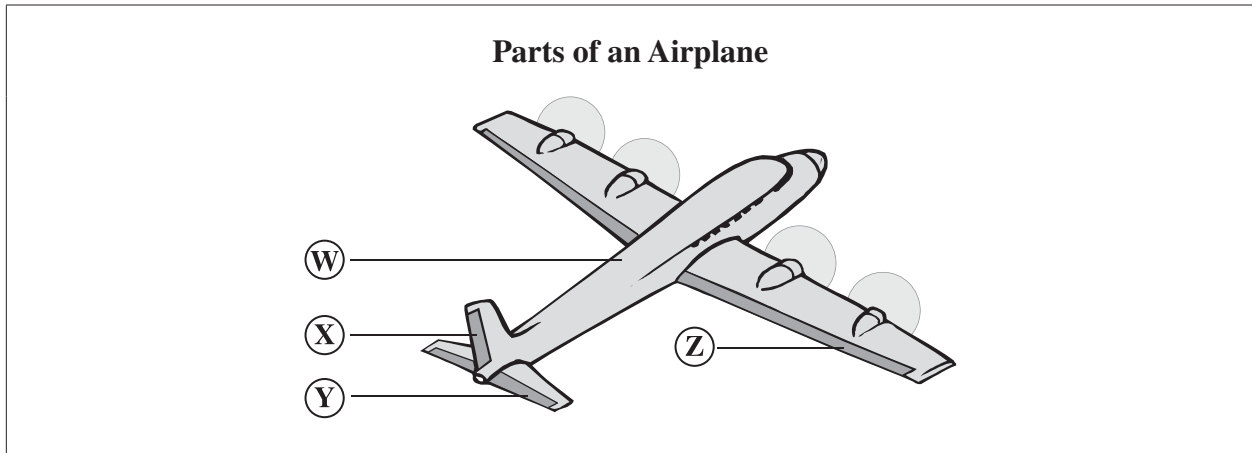


8. *Bernoulli's principle states that increasing a fluid's i causes the pressure that is exerted by that fluid to ii .*

The statement above is completed by the information in row

Row	<i>i</i>	<i>ii</i>
A.	volume	increase
B.	volume	decrease
C.	speed	increase
D.	speed	decrease

Use the following information to answer questions 9 and 10.



9. The fuselage is labelled by the letter

- A. W
- B. X
- C. Y
- D. Z

10. The part of the airplane that is used to control the up-and-down movement of the nose of the airplane is labelled by the letter

- A. W
 - B. X
 - C. Y
 - D. Z
-

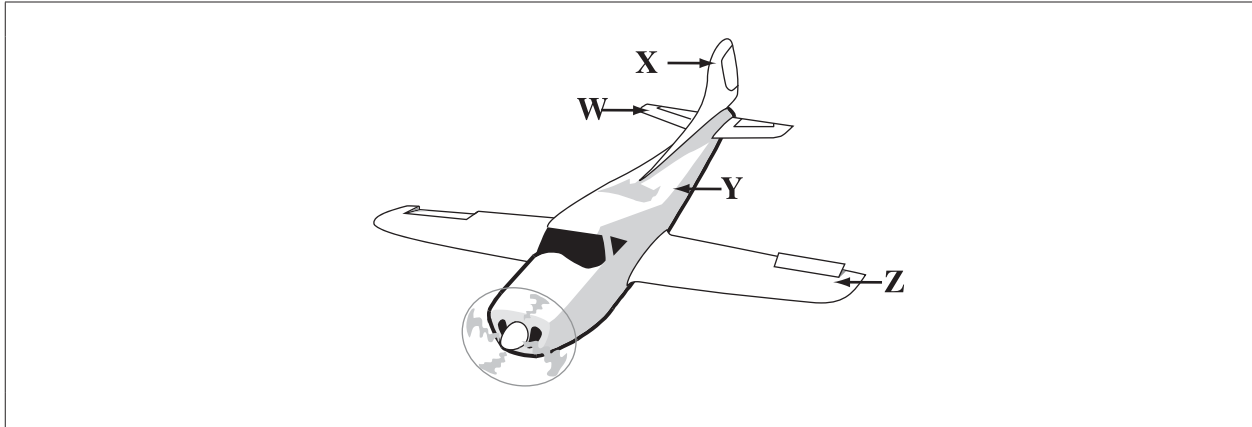
11. Which of the following modifications causes a model glider to turn toward the right?

- A. The right aileron up, the left aileron down, and the rudder left
- B. The right aileron up, the left aileron down, and the rudder right
- C. The right aileron down, the left aileron up, and the rudder left
- D. The right aileron down, the left aileron up, and the rudder right

12. On an airplane, the rudder is located on the

- A. horizontal stabilizer
- B. vertical stabilizer
- C. elevators
- D. wings

Use the following information to answer question 13.



13. On which labelled part of the airplane is an elevator located?

- A. W
- B. X
- C. Y
- D. Z

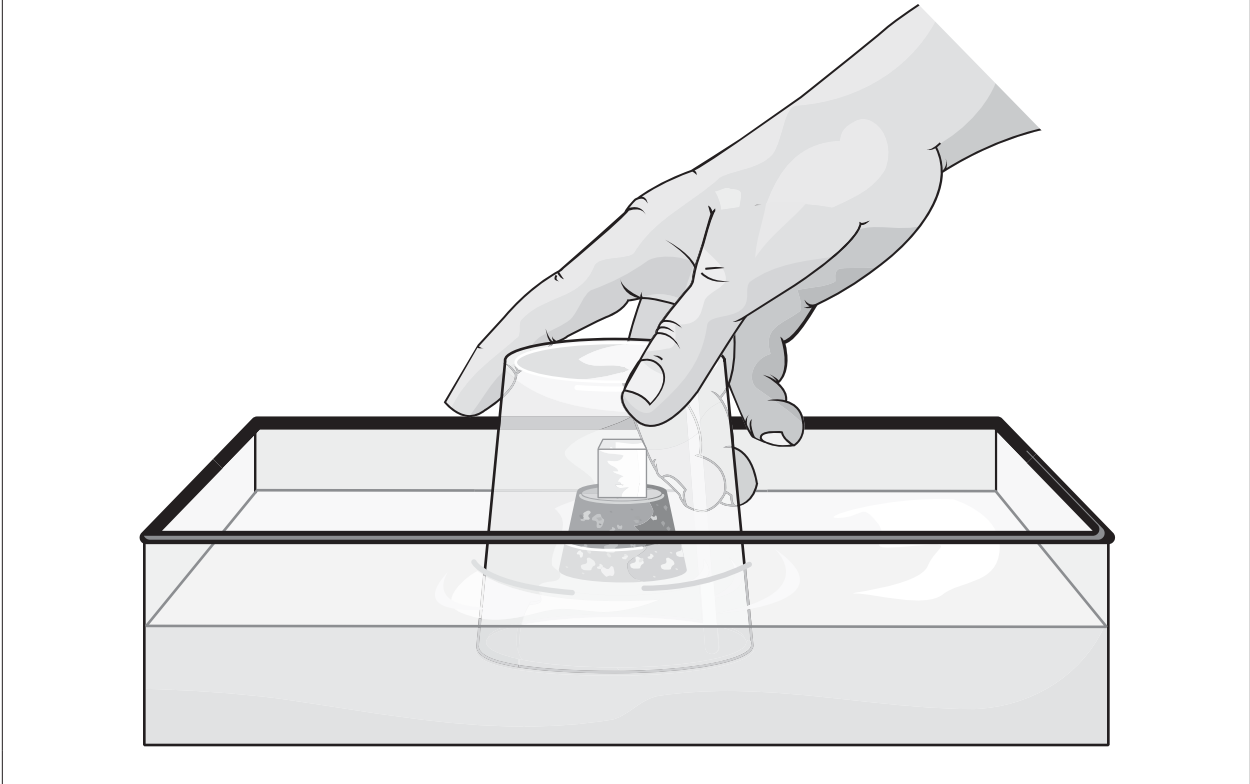
14. While in flight, an airplane experiences the downward force of *i* and the upward force of *ii* .

The statement above is completed by the information in row

Row	<i>i</i>	<i>ii</i>
A.	gravity	lift
B.	gravity	thrust
C.	drag	lift
D.	drag	thrust

Use the following information to answer question 15.

A sugar cube is balanced on a piece of cork floating in a small fish tank. An empty glass is placed over the cork and sugar cube. The glass is then pushed down to the bottom of the tank.



15. When the glass reaches the bottom of the tank, the sugar cube will **most likely**
- A. stay dry, because the air in the glass will expand
 - B. stay dry, because the air in the glass will take up space
 - C. get wet, because the water will exert less pressure than the air
 - D. get wet, because the water will exert more pressure than the air

Use the following information to answer question 16.

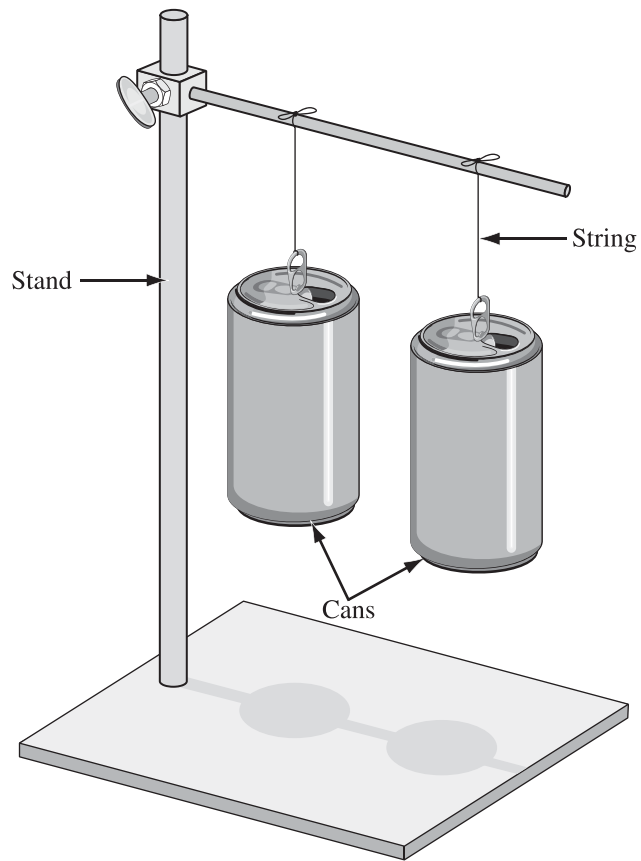
Ricardo completed eight trials of his paper airplane model, which he designed to travel at least 10 m. The following chart shows the results of the trials.

Trial Number	Distance Travelled (m)
1	10
2	7
3	15
4	15
5	5
6	5

16. Which of the following statements do the data above **best** support?
- A. The materials used were too heavy.
 - B. The materials used were too light.
 - C. The design was unreliable.
 - D. The design was reliable.

Use the following information to answer question 17.

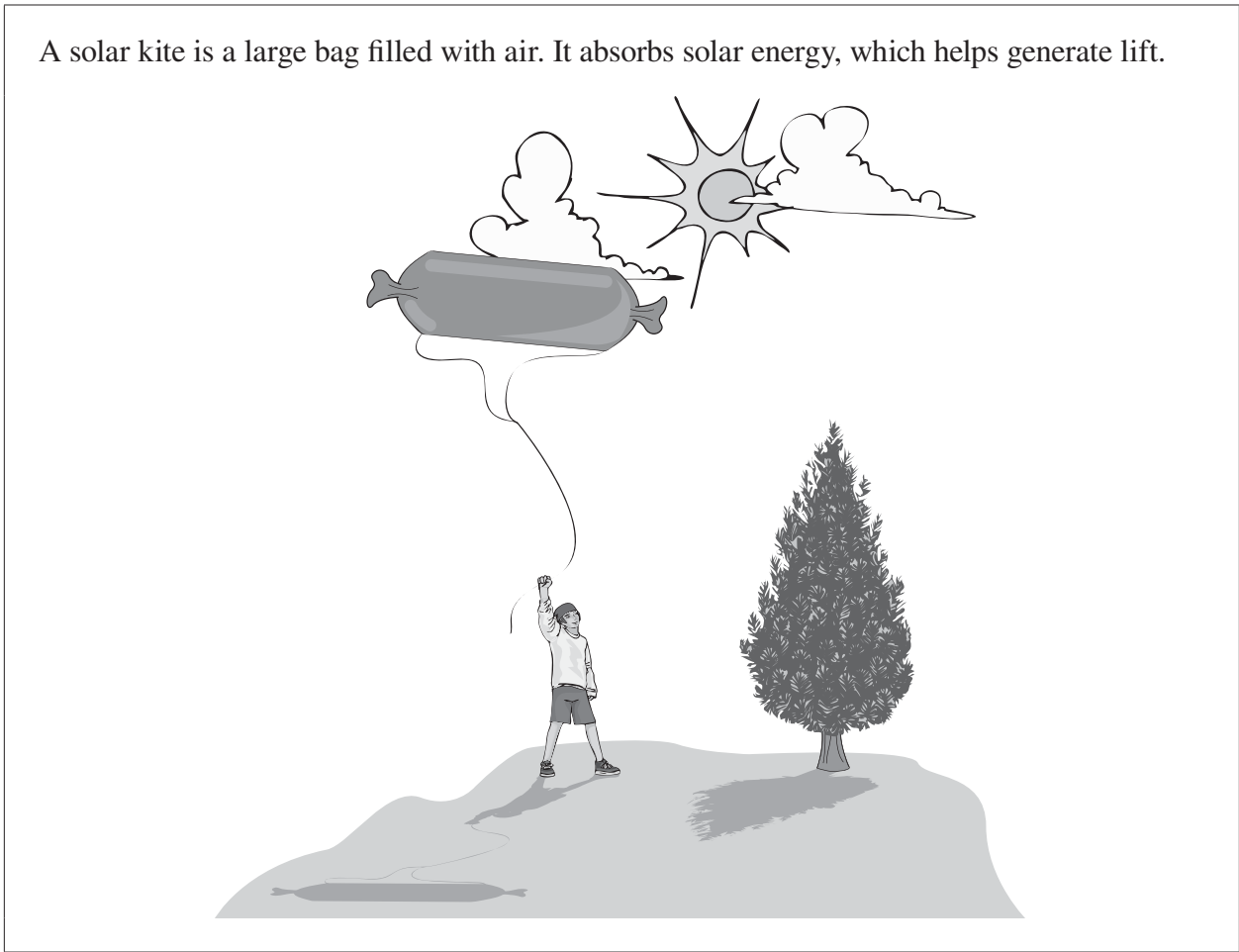
A student suspends two empty cans from a stand as shown below.



17. If a constant stream of air is blown between the cans shown in the diagram above, then the cans will **most likely** move
- A. up and down
 - B. back and forth
 - C. toward each other
 - D. away from each other

Use the following information to answer question 18.

A solar kite is a large bag filled with air. It absorbs solar energy, which helps generate lift.



18. A solar kite rises because the air inside the kite
- A. expands and the air particles move apart
 - B. expands and the air particles move closer together
 - C. contracts and the air particles move apart
 - D. contracts and the air particles move closer together

Use the following information to answer question 19.

Melanie carried out four trial flights in which she manipulated the control surfaces of an airplane. The results are shown below.

Trial 1 The airplane banked left.

Trial 2 The airplane banked right.

Trial 3 The nose of the airplane moved upward.

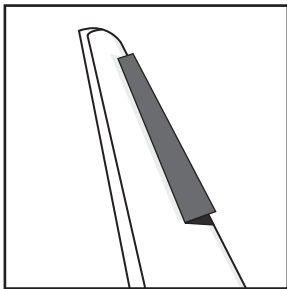
Trial 4 The nose of the airplane moved downward.

19. In which trials did Melanie manipulate the elevators?

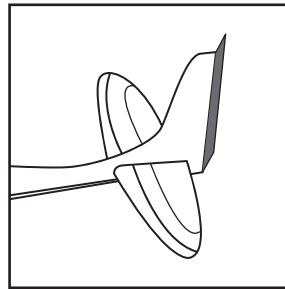
- A. Trials 1 and 2
- B. Trials 1 and 4
- C. Trials 3 and 2
- D. Trials 3 and 4

20. Which of the following shaded structures provides propulsion in an airplane?

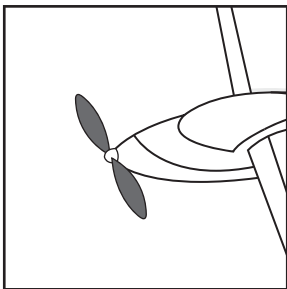
A.



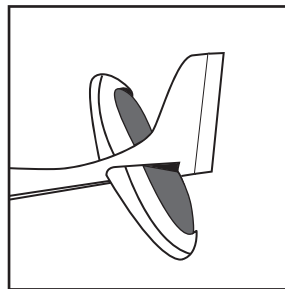
B.



C.



D.



Science 6 – Practice Test 2020

Air, Aerodynamics, and Flight Key

Question # in Document	Key
1	D
2	B
3	B
4	C
5	D
6	A
7	B
8	D
9	A
10	C
11	B
12	B
13	A
14	A
15	B
16	C
17	C
18	A
19	D
20	C