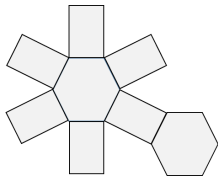
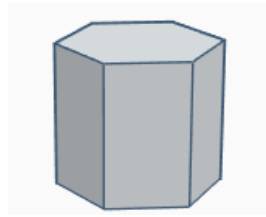
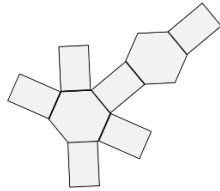


Part1: Spatial & Abstract Reasoning Tests

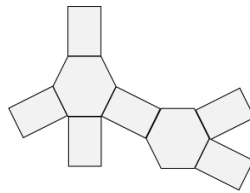
1. Which pattern are NOT the unfolded net of the given 3D shape?



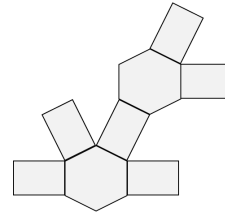
A



B



C



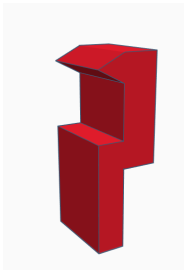
D

All
patterns
can be
folded to
3D shape

E

For question 2 – 3, select a shape which is not the same 3D shape of the given?

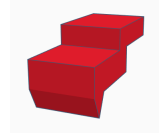
2



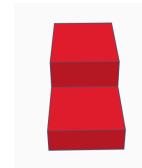
A



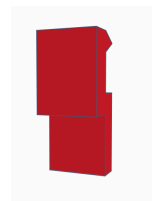
B



C

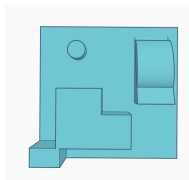
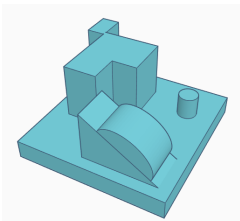


D

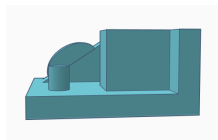


E

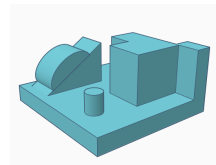
3



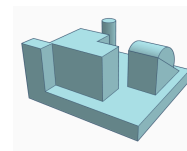
A



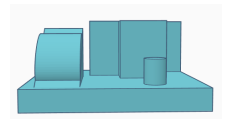
B



C

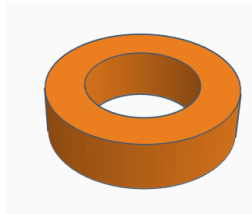


D

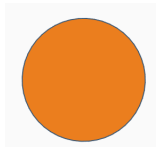


E

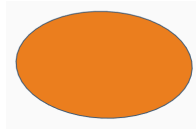
4. Which face could be created with a single cut through the following 3D shape?



A



B



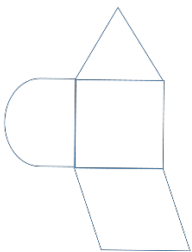
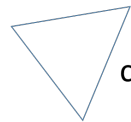
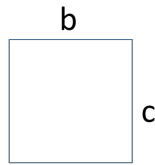
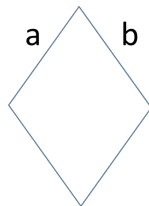
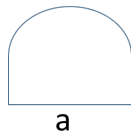
C



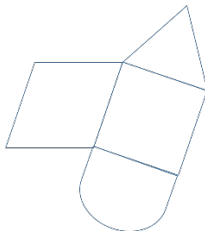
D

E. None of the above

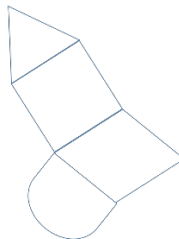
5. Which one matches the shape when joined together by the corresponding letters?



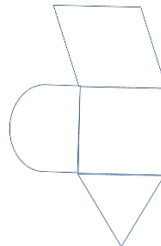
A



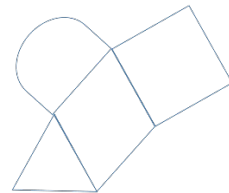
B



C



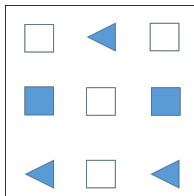
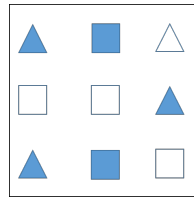
D



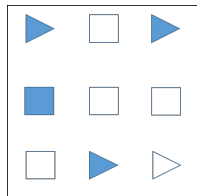
E

For question 6 – 7, which of the given shape is identical to the main image?

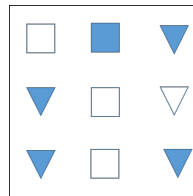
6



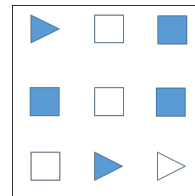
A



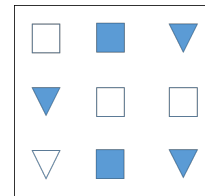
B



C

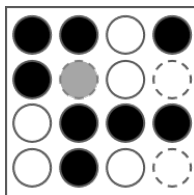
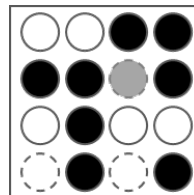


D

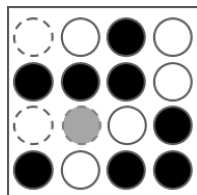


E

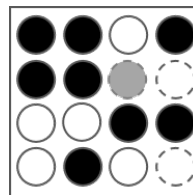
7



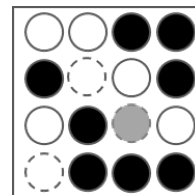
A



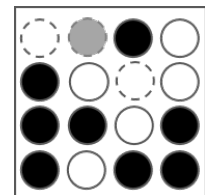
B



C

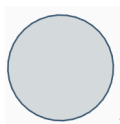
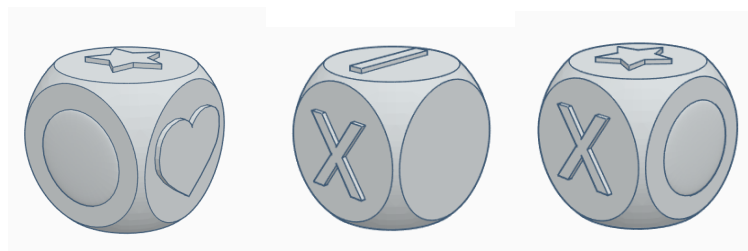


D



E

8. Three views of the same cube are shown below. Which symbol is opposite the X?



A



B



C

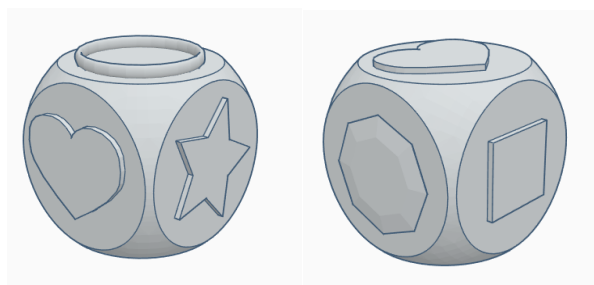


D

Empty face

E

For question 9 – 10, use two views of the same cube are shown below to answer question



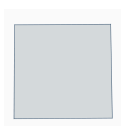
9. Which symbol is opposite the



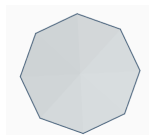
?



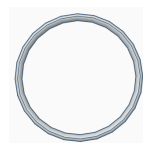
A



B



C



D

Other

E

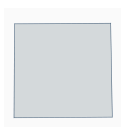
10. Which symbol is opposite the



?



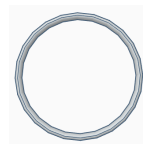
A



B



C

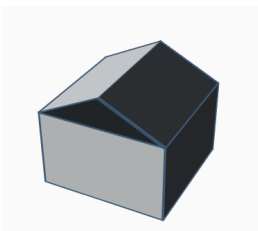
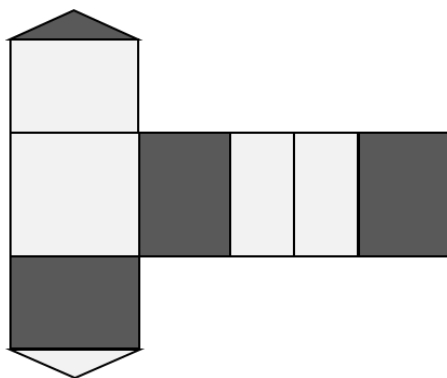


D

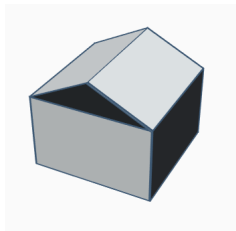
Other

E

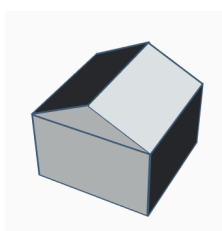
11. Which of the solid shapes could be made from the pattern?



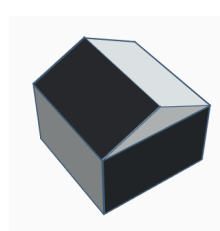
A



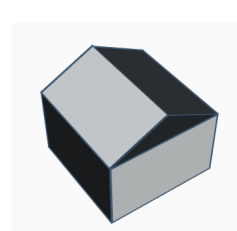
B



C



D



E

12. Which number logically come next in the series?

11 – 5 – 12 – 4 – 13 – 3 –

- A. 14 B. 15 C. 16 D. 17 E. 18

13. Which one of the numbers does not belong in the following series?

1 – 2 – 3 – 5 – 9 – 16 – 21 – 29 – 53 – 97

- A. 3 B. 9 C. 21 D. 29 E. 53

14. Which conclusions are logically follow to given statements

Statements:

All the carbonated drinks are beverage.

Some beverages are alcohol.

Some beverages are healthy drink.

Conclusions:

(1) None of alcohol is healthy drink.

(2) Some beverages are carbonated drink.

(3) Some healthy drinks are alcohol.

(4) Some carbonated drink are alcohol.

Which conclusions are logically follows to given statements

- A. Only conclusion (1)
B. conclusion (1) and (2)
C. Only conclusion (2)
D. conclusion (2) and (4)
E. None of the above

15. Which conclusions are logically follow to given statements

Statements:

All capacitors are electronics.

Some electronics are hardware.

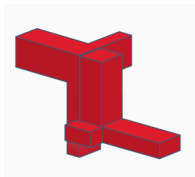
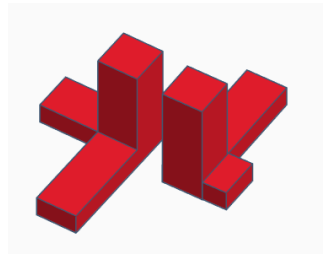
Conclusions:

- (1) Some hardware are electronics.
(2) Some capacitors are hardware.
(3) All electronics are capacitors.

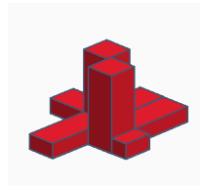
Which conclusions are logically follows to given statements

- A. Conclusions (2) and (3)
B. Only conclusion (1)
C. Only conclusion (2)
D. Only conclusion (3)
E. Conclusion (1) and (2)

16. Which one is not the result of these given two shapes were combined?



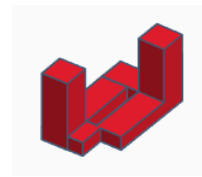
A



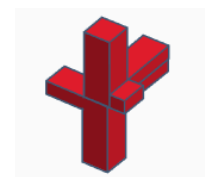
B



C



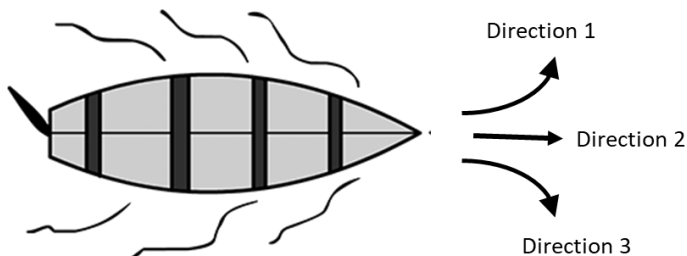
D



E

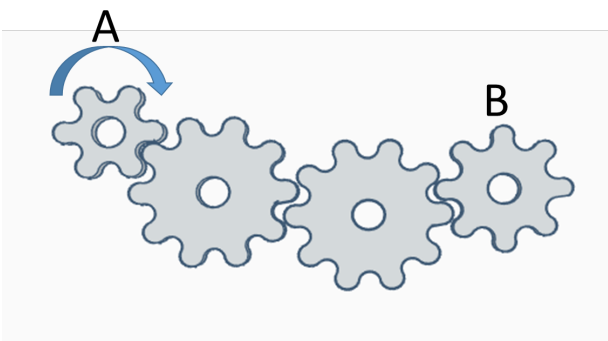
Part2: Mechanical tests

17. Which direction will the boat go through the water?



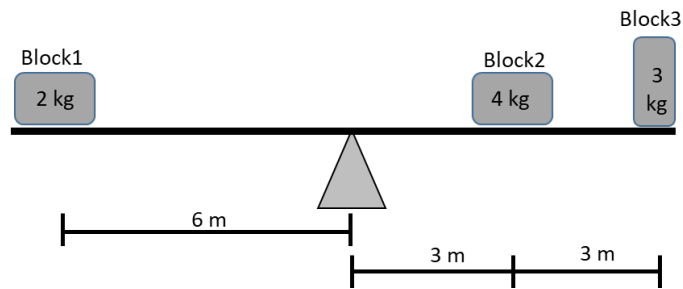
- A. Direction 1
- B. Direction 2
- C. Direction 3
- D. Can not say

18. All the gear shown below are fixed and can only rotate around their own axis. If gear A turns clockwise by 10 rotations, how does gear B turn?



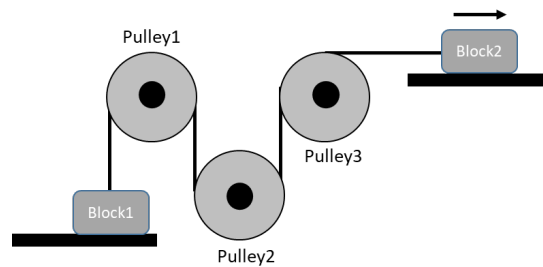
- A. Clockwise, with 10 rotations.
- B. Clockwise, more than 10 rotations.
- C. Counterclockwise, with 10 rotations.
- D. Counterclockwise, more than 10 rotations.
- E. Counterclockwise, less than 10 rotations.

19. How can we balance the bar?



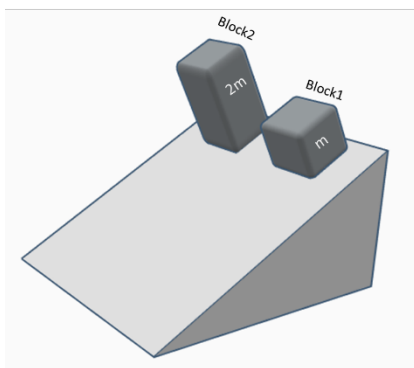
- A. Put 4 kg on block1
- B. Remove block2 from bar
- C. Remove block 3 from bar
- D. Put 2 kg on block 1
- E. None of the above can balance bar.

20. If we move block2 to the right 20 cm, how do block1 and pulley2 move?



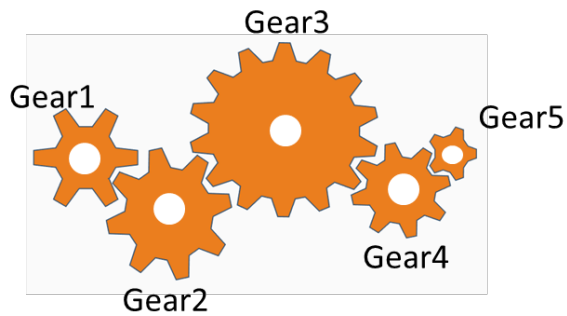
- A. Block1 move up 10 cm, pulley move up 20 cm.
- B. Block1 move up 20 cm, pulley move up 20 cm.
- C. Block1 move up 10 cm, pulley does not move.
- D. Block1 move up 10 cm, pulley move up 10 cm.
- E. Block1 does not move, pulley move up 10 cm.

21. Block1 has mass of 'm' and was sliding down a frictionless inclined plane with acceleration of 'a' at the bottom of inclined plane. If block2 has double mass and volume of block1, what is its acceleration at the bottom of the inclined plane?



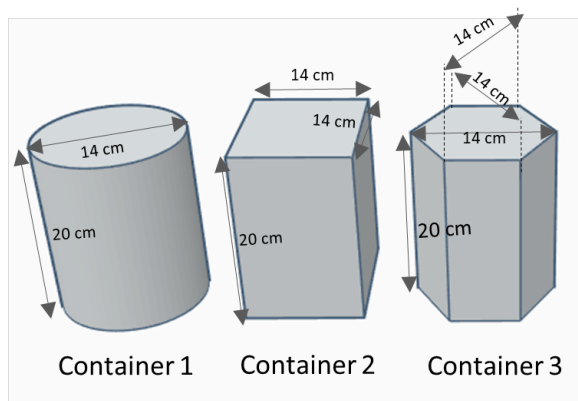
- A. a
- B. 2a
- C. 4a
- D. a^2
- E. Other value

22. If gear 1 turn with speed 10 round per minute, which gear will make the most turns in 5 minute?



- A. Gear1
- B. Gear2
- C. Gear3
- D. Gear5**
- E. Gear2 and Gear4

23. Which container will hold more liquid?

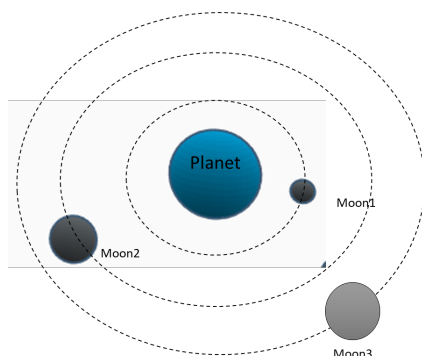


- A. Container 1 > container 2 > container 3
- B. Container 3 > container 2 > container 1
- C. Container 2 > container 3 > container 1
- D. Container 2 > container 1 > container 3**
- E. Container 3 > container 1 > container 2

24. The scientist measure temperature in different points at the beach, Where is the temperature change highest through 24 hours?

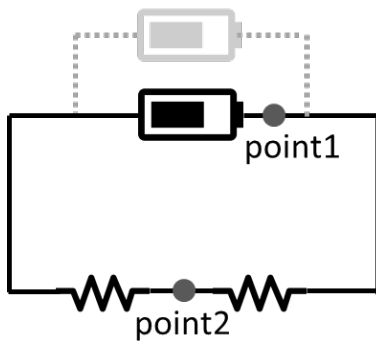
- A. On the surface of water.
- B. on the surface of the sand.**
- C. The area between water and sand.
- D. Deep into the sand 1 meter.
- E. Deep into water 1 meter.

25. If a planet has moon1, moon2 and moon3 as satellite, which moon will take longer time to go around the planet?



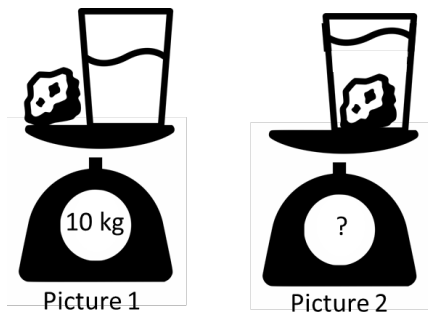
- A. Moon1
- B. Moon2
- C. Moon3**
- D. All of them take the same time
- E. Can not say

26. What would be the current at point1 and point2? if an additional power source adds as shown in the circuit



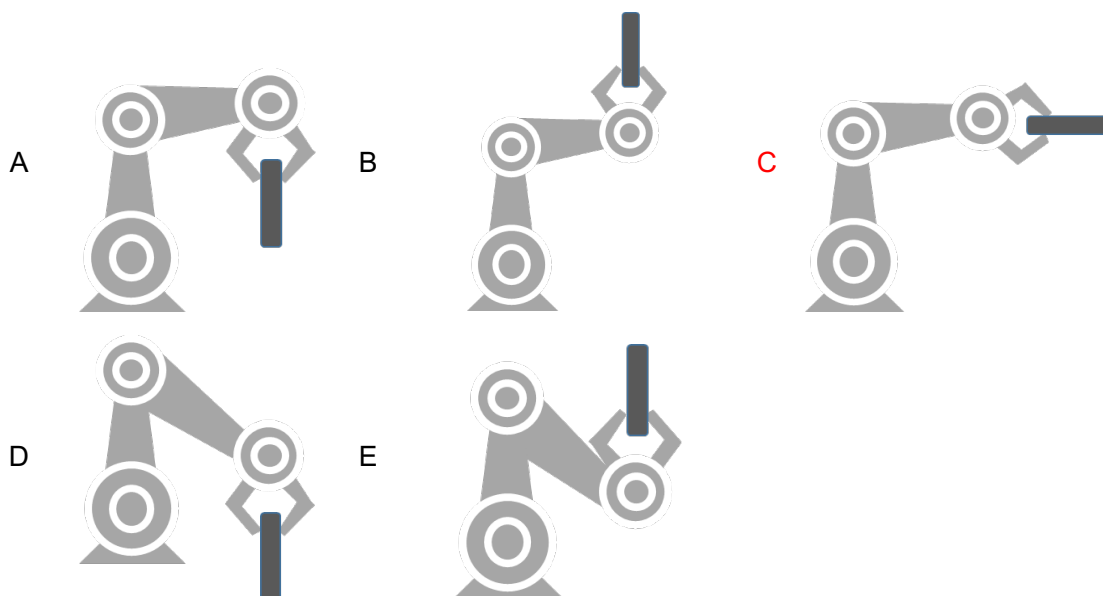
- F. Point1 decrease, Point2 increase
- G. Point1 increase, Point2 decrease
- H. Point1 is no different, Point2 increase
- I. Both Point1 and Point2 increase
- J. Both Point1 and Point2 are no different**

27. We see the rock in picture 1 and 2 are same size. Both pictures use the same glass and same volume of water. If the picture 1 weight 10 kg. How it should be weight in picture 2?



- A. Equal to 10 kg.
- B. Less than 10 kg.**
- C. More than 10 kg.
- D. Close to 0 kg.

28. Which position of robot arm that the gripper hold the maximum weight?



29. If taking off the plane on earth, it needs 1 km runway long. How long does it need on moon?

- A. less than on earth.
- B. more than on earth.
- C. can take off without runway.
- D. impossible to take off.
- E. cannot say.

30. What will happen if we fire a gun on mars compare on the earth?

- A. The bullet go further than on earth.
- B. The bullet go less far than on earth.
- C. The bullet go same distance as on earth.
- D. The bullet will go strength for a while then float into space.
- E. The bullet will never fall on mars surface.

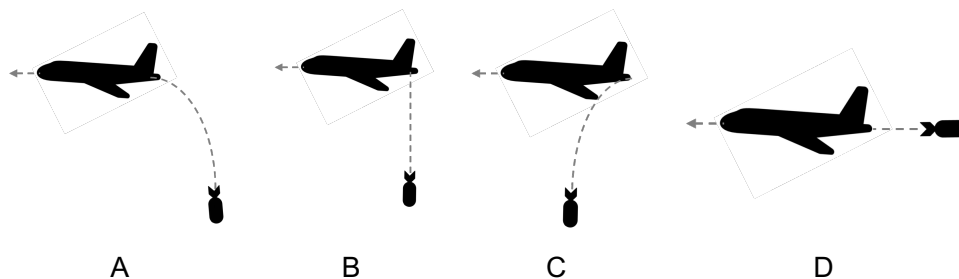
31. If we are on the earth and see a satellite explode in space at the same time as we see the rifle fire on earth, what is the sequence that we can observe?

- A. the sound of rifle -> rifle fire, satellite explode
- B. rifle fire, satellite explode -> the sound of rifle -> sound of satellite exploded
- C. rifle fire, satellite explode -> sound of satellite exploded -> the sound of rifle
- D. the sound of rifle -> sound of satellite exploded -> rifle fire, satellite explode.
- E. rifle fire, satellite explode -> the sound of rifle

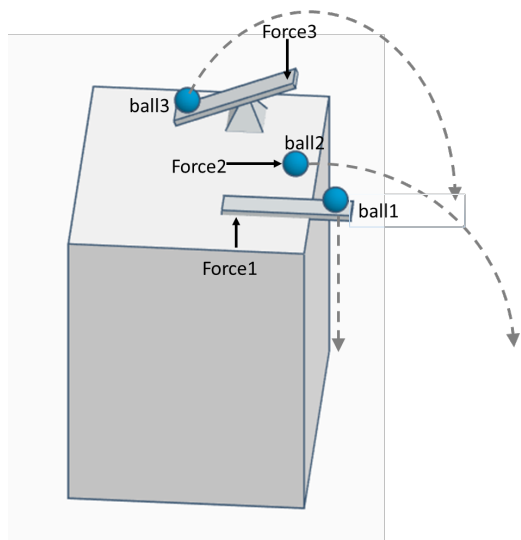
32. A sender on earth send a message by radio wave at frequency of 433 MHz to a receiver on Alpha Centauri which is the closest star system to solar system. If the distance between earth and Alpha Centauri is 4.2 light-years, how long does the sender can get a reply? (the speed of light is 3×10^8 m/s)

- A. 1 -2 weeks.
- B. 1 – 2 months.
- C. 1 – 2 years.
- D. 4 – 6 years
- E. 7 – 11 years.

33. Which situation will happened when the bomb release from the plane in case there is no wind?



34. If we push force1 force2 and force3 at the same time to make the ball move as shown in projection lines. Which is the sequence they hit the ground?



- A. Ball1 then Ball2 then Ball3
- B. Ball1,Ball2 at the same time then Ball3**
- C. Ball3 then Ball2 then Ball1
- D. Ball1 then Ball2,Ball3 at the same time
- E. All of them hit the ground at the same time

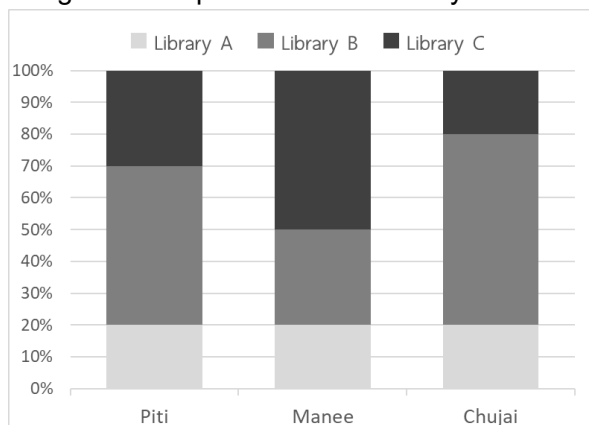
Part 3 Practical & Abstract numerical tests

35. If Maria left a \$10.16 tip on a breakfast that cost \$86.89, approximately what percentage was the tip?

- A. 6%
- B. 12%**
- C. 17%
- D. 25%
- E. 31%

Use the following chart and information to answer question 36 – 38

The graph shows the percentage of each person went to library in one semester



Information of Mr.Piti, Ms.Manee and Ms.Chujai go to library in one semester:

- Mr.Piti went to library C 12 times.
- Ms.Manee went to all libraries total 20 times.
- Ms.Chujai went to library A 10 times.

36. Who visited library B most often?

- A. Mr.Piti
- B. Ms.Manee
- C. Ms.Chujai
- D. Mr.Piti and Ms.Chujai went the most.
- E. Not enough information to answer.

37. Who visited library A most often?

- A. Mr.Piti
- B. Ms.Manee
- C. Ms.Chujai
- D. All of them went to library A with the same number of times.
- E. Not enough information to answer.

38. Which sentence is correct?

- A. Ms.Manee and Ms.Chujai have same number of times went to library C.
- B. All of them went to library A with the same number of times.
- C. All of them went to library B most often.
- D. Mr.Piti went to library more often than Ms.Chujai
- E. All sentences are wrong.

39. Shop A and Shop B sell the same brand of shoes with different promotion. Which given sentence is wrong?



- A. If buy only 1 item, both shops give the same price.
- B. If buy 3 items, both shops give the same price.
- C. If buy 2 items, Shop A is cheaper.
- D. If buy 3 items, Shop A is cheaper.
- E. There are more than 1 sentence wrong.

40. If we will have a conference meeting with 3 different country as shown below in the table, what is the most suitable time for 3 of them in official time.

Country	Time zone
Thailand	GMT+7
France	GMT+2
Green land	GMT-2

- A. 6 PM in Thailand
- B. 6 PM in France
- C. 6 PM in Green land
- D. 8 AM in France
- E. 8 AM in Thailand

41. 25% of matches played by a team end in a draw. If the number of the team's wins is twice the number of losses, by what percentage are the wins greater than the draws?

- A. 25%
- B. 50%
- C. 75%
- D. 100%
- E. Cannot Say

42. Two solution of 92% and 98% purity respectively are mixed together resulting a mixture of 95% purity. What is the ration of first and second soultion?

- A. 1:1
- B. 1:2
- C. 1:3
- D. 2:3
- E. 3:2

43. Teacher A and his two students's average age is 15 years. Teacher B and same two students average age is 16 years. How old is teacher B, if teacher A is 33 years old.

- A. 33 years
- B. 36 years
- C. 32 years
- D. 30 years
- E. 27 years

44. If the word "is" can be arranged in 2 different way, the word "era" can be arranged in 6 different way, The word "wire" can be arrange in 24 different way, How many different ways can the letter of the word "europa" be arranged?

- A. 420
- B. 360
- C. 720
- D. 5,040
- E. 10,080

45. There is a discount of 25% to booking hotel with agenda A and 35% discount to booking with agenda B. If the different between booking with both agenda is 450 baht, what is the original price booking direct at the hotel?

- A. 5,000
- B. 4,500
- C. 3,500
- D. 1,500
- E. 1,200

Part 4 Space Explorations

46. Space has turned from the theater of political maneuvering during the Cold War to the theater of private competition in present days. Which of the following is the least important reason behind the driving force of the private enterprises?

- A. There is a possibility for a mining and resource extraction.
- B. There is a possibility to become a dominant power on the internet services.
- C. There is a possibility to find extraterrestrials.
- D. There is a possibility to gain new territories in other planets.
- E. There is a possibility for a space tourism business.

47. From the history of the space exploration, which of the following occupations have never become an astronaut?

- A. Pilot
- B. Teacher
- C. Engineer
- D. Soldier
- E. There is no correct answer in this case.

48. What idea is the most equivalent to terraformation?

- A. Elon Musk wants to nuke Mars.
- B. Donald Trump opens Alaska for logging and oil drilling.
- C. Greta Thunberg launches Friday strike to fight climate change.
- D. The idea is hypothetical. There is no ground to discuss over it.

49. What is the major reason that Elon Musk and Stephen Hawking proposed humankind to become multiplanetary?

- A. To ensure the survival of Homo Sapiens as a species
- B. To create an economic driving force between planets
- C. To prevent the destruction of the Earth from climate change
- D. To reduce the burden of the Earth by moving human to other planets

50. Who is the father of the American Moon's Landing?

- A. Buzz Aldrin
- B. Neil Armstrong
- C. Wernher von Braun
- D. John F Kennedy
- E. Charles Duke

51. Which of the following is considered as the opposite side of Thailand's positions during the Cold War?

- A. Saturn V
- B. Apollo
- C. John F Kennedy
- D. Nikita Khrushchev
- E. Adolf Hitler

52. Which of the following name in the space industry that is not within the same category as others?

- A. Blue Origin
- B. SpaceX
- C. Virgin Galactic
- D. Bigelow Aerospace
- E. NASA

53. Who was the first person that marked the beginning of the private space competition?

- A. Jeff Bezos
- B. Elon Musk
- C. Burt Rutan
- D. Richard Branson
- E. Neil Armstrong

54. Students of which university that successfully launched the rocket into Space in 2019?

- A. Harvard University
- B. MIT
- C. Georgia Institute of Technology
- D. University of California at Berkeley
- E. University of Southern California

55. Which of the following event is true?

- A. Monkey was the first animal to be in space.
- B. Thailand was the first country in the world to send Durian into the Earth's orbit.
- C. Laika was specially raised and trained for the space mission.
- D. All flies that went with the V2 Rocket died during the parachute back to the Earth.

56. Which of the following city is the cradle of American Space Flight?

- A. Huntsville
- B. Peenemunde
- C. Cape Canaveral
- D. Houston
- E. Washington DC

57. Who in here that is not considered as a rocket scientist?

- A. Konstantin E. Tsiolkovskiy
- B. Robert H. Goddard
- C. Hermann J. Oberth
- D. Harrison H. Schmitt
- E. Wernher von Braun
- F.

58. On July 2019, Thailand launched Dr. Chairat Uthaipibull's research project onto the ISS by the propeller of the Space X Dragon Spacecraft. It was the Kingdom's first research project experimented on the ISS. Which of the following is the objective of this research project in space?

- A. To design a novel antimalarial drug
 - B. To develop a new AIDS medicine
 - C. To find a new way to treat rabies
 - D. To find methods for Thailand to tackle climate problems
 - E. To find a new drug for diarrhea
 - F.
59. Which of the following event could become a life changing for the whole of humanity and our Earth?
- A. India launched Chandrayaan-2 to the moon.
 - B. Elon Musk launched a Tesla Roadster into orbit.
 - C. Donald Trump declared to establish the US Space Force.
 - D. US Navy accepted and confirmed the existence of UFOs flying over Earth's atmosphere.
 - E.
60. In terms of astronomy, what phrase is the closest to describe "Oumuamua"?
- A. The first extraterrestrial object passing into our solar system with a jet speed
 - B. The first interstellar comet ever detected in our solar system
 - C. A space junk that potentially an exploratory ship sent to check out our solar system.
 - D. A comet with a large fume of coma traveling by the gravitational forces of the sun
61. Which was the first rocket that reached space?
- A. Jupiter
 - B. Titan
 - C. Thor
 - D. Saturn V
 - E. V-2
62. What was the name of the free world's rocket that launched the satellite against Sputnik?
- A. Jupiter
 - B. Loki
 - C. Thor
 - D. Saturn V
 - E. V-2
63. What was the contra measure to Sputnik?
- A. Explorer-I
 - B. Theos
 - C. Skylab
 - D. Apollo
 - E. ICBM
64. What was the cause of failure of Apollo 13?
- A. The malfunction of the electrical generator
 - B. The explosion of the oxygen tank
 - C. The error of the propulsion system
 - D. The guidance system was out of work.
 - E. The deterioration of the heating system within the spaceship
65. What does the Space Launch System (SLS) expected to do?
- A. Transport necessary items for the construction of a moon base
 - B. Carry crewed missions beyond Earth orbit
 - C. Stage a trip to Mars
 - D. Propel an expedition to asteroids

E. All of the above

66. Which of the following is the best description to SpaceX's Starship?

- A. A combination of spacecraft and rocket with a capability to reach Earth's orbit and deep space exploration
- B. The design is a development from the spaceshuttle with a reusable capability.
- C. It is intended to transport 100 passengers to Mars.
- D. It is the world's first interplanetary transportation system.

67. What is not correct regarding India's Mission to the Moon in 2019?

- A. The mission's main spacecraft is so called Chandrayaan-2.
- B. The Vikram Lander crashed onto the lunar surface.
- C. The commander of the mission was blamed harshly by Prime Minister Narendra Modi.
- D. The landing anomaly was suspected to be the result of the engine didn't produce enough thrust.

68. Which one has never flown to space?

- A. Columbia
- B. Pathfinder
- C. Discovery
- D. Atlantis
- E. Endeavour

69. Who in here was not a crew of Apollo 11?

- A. Buzz Aldrin
- B. Neil Armstrong
- C. Charles Duke
- D. Michael Collins

70. What is not a byproduct of space explorations?

- A. Selfie stick
- B. Microwave oven
- C. GPS
- D. Pampers
- E. Blockchain

71. What is not true about the US Space Force (USSF)?

- A. It will be the sixth branch of the US Armed Forces.
- B. The purpose is to protect the US's interests in space and the peaceful use of space by all.
- C. The Project was first revealed to the public by President Trump.
- D. It was proposed as a result of the potential threats from outer space.

72. Who is Thailand's Father of Science?

- A. King Bhumibol
- B. King Mongkut
- C. Dr. Art-Ong Jumsai Na Ayudhya
- D. King Chulalongkorn
- E. King Narai

73. How far is Karman line from the sea level?

- A. 10 kms
- B. 100 kms

- C. 1000 kms
- D. 10000 kms
- E. ∞ kms

74. Who was the founder of the US Space & Rocket Center (USSRC)?

- A. John F. Kennedy
- B. **Wernher von Braun**
- C. Neil Armstrong
- D. Dwight D. Eisenhower
- E. Douglas MacArthur

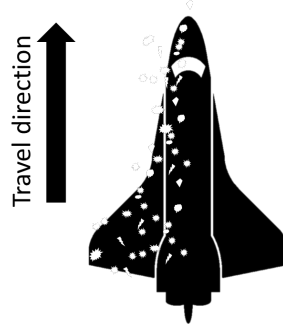
75. Which of the following knowledge is the least relevant to rocket science?

- A. Trajectory
- B. Propulsion
- C. Guidance and control
- D. **Metabolism**
- E. Heat shield

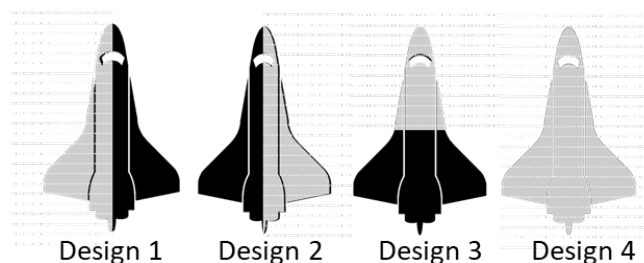
Part 5 Newton Rocketry Skills & Science Analysis

Use the following design to answer the questions 76 - 79

In a journey for space mining, the spacecraft need to pass through a Kuiper Belt which has a lot of meteorite. 95% of spacecrafts were fail from hitting by meteorite and only 5% were survive came back to earth. All the survival spacecrafts were recorded all damage tracks and are shown as below figure.



The engineers are design 4 different types of armour to protect spacecraft as follows:



76. Which design will increase number of survivors?

A. Design 1

B. Design 2

C. Design 3

D. Design 4

77. Which design will decrease number of survivors?

A. Design 1

B. Design 2

C. Design 3

D. Design 4

78. Which sentence is correct about meteorite's orbit?

A. They move from left to right.

B. They move right to left.

C. They move from front to back.

D. They move in many directions.

79. If the engineer cannot put armour for the spacecraft, which way can help spacecraft survival?

A. move the spacecraft slower.

B. Change the direction of spacecraft to be the same as meteorite's orbit direction.

C. Change the direction of spacecraft to be opposite of meteorite's orbit direction.

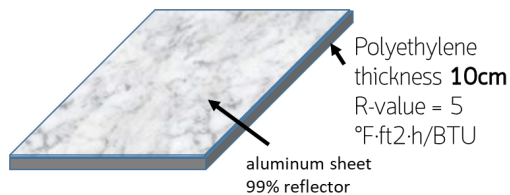
D. None of the above.

The following pictures are shown 4 type of insulator. Use the following information to answer the question 80 -82.

the **R-value** is a value which is used to measure how well of an insulator can resists heat flow. The value varies from type and thickness. All given insulator can retain their potential for 10 years.

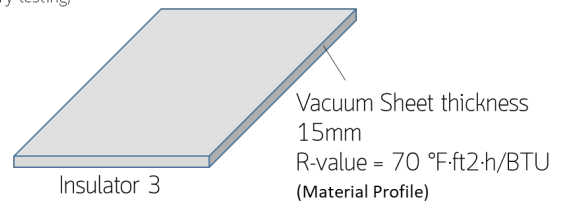
Insulator 1 : R-Value = 95 °F·ft²·h/BTU

(from laboratory testing)



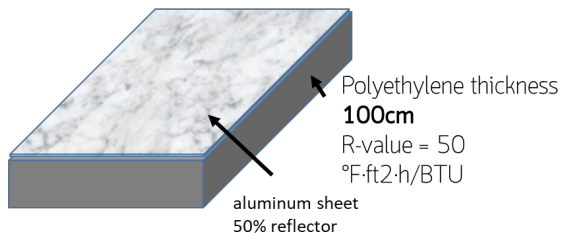
Insulator 3 : R-Value = 75 °F·ft²·h/BTU

(from laboratory testing)



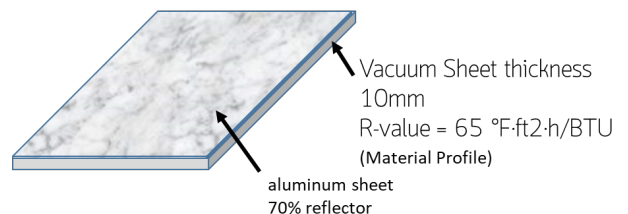
Insulator 2 : R-Value = 65 °F·ft²·h/BTU

(from laboratory testing)

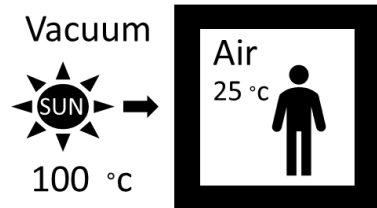


Insulator 4 : R-Value = 80 °F·ft²·h/BTU

(from laboratory testing)

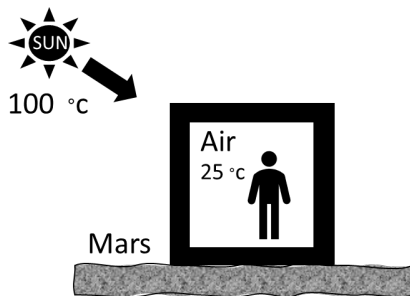


80. Which insulator should be used in this situation?



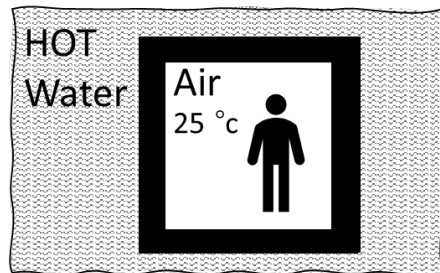
- A. Insulator 1
- B. Insulator 2
- C. Insulator 3
- D. Insulator 4

81. Which insulator should be used on Mars which cover with dust after 9 years?



- A. Insulator 1
- B. Insulator 2
- C. Insulator 3
- D. Insulator 4

82. Which insulator should use if the box is diving into hot water?

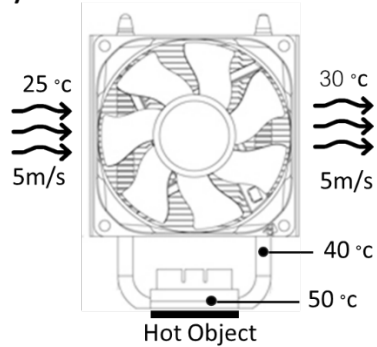


- A. Insulator 1
- B. Insulator 2
- C. Insulator 3
- D. Insulator 4

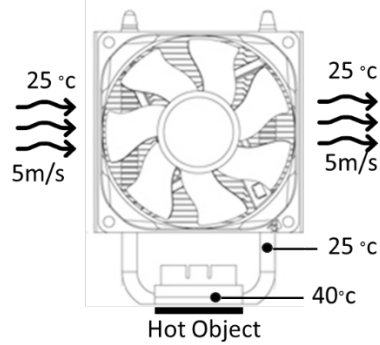
Use the following information to answer question 83 – 84

There are 4 different ventilation systems to be used for processing system on spacecraft as shown on follow.

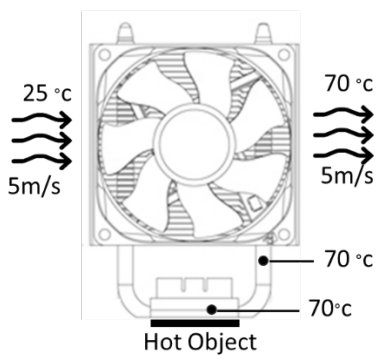
System : 1



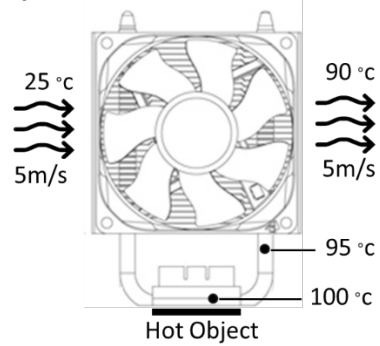
System : 3



System : 2



System : 4



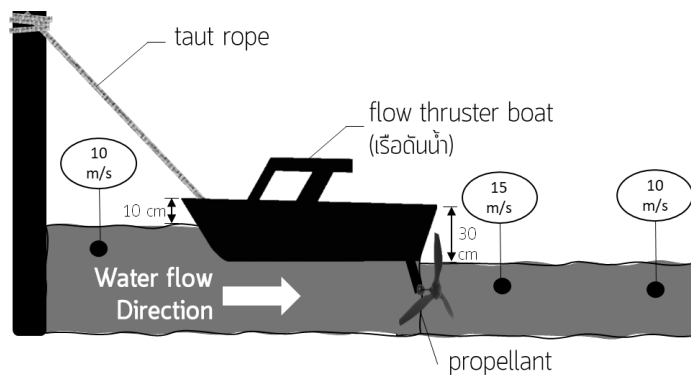
83. Which system has a best potential?

- A. System 1 B. **System 2** C. System 3 D. System 4

84. Which system has a worst potential?

- A. System 1 B. System 2 C. **System 3** D. System 4

The flow thruster boat is a machine for drainage water to the sea by increasing water flow rate. Use the following information to answer question 85 - 86



85. which sentence is correct?

- A. The boat increase water flow rate.
- B. The boat does not change water flow rate
- C. The boat decrease water flow rate.
- D. Not enough information to conclude

86. What is the evidence shows that the flow thruster boat is successfully drainage water?

- A. water level decrease.
- B. water flow rate increase.
- C. The rope taut.
- D. The drainage rate of water increase.

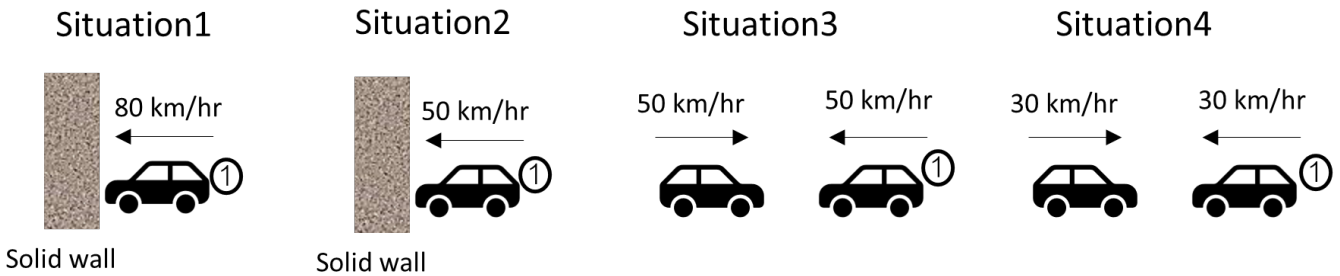
87. What value can use for assessment the performance of the flow thruster boat?

- A. meter per second
- B. cubic meter per hour
- C. tension in rope
- D. water level

88. What is the best situation to use the flow thruster boat?

- A. still water
- B. flowing water in same direction with more flowing rate.
- C. Flowing water in opposite direction.
- D. Every situation gives the same performance.

Use the following picture that depict 4 situations of car cash to answer question 89 - 90



89. Which situation the car number1 get the highest impact?

- A. Situation 1 B. Situation 2 C. Situation 3 D. Situation 4

90. Which situation the car number1 get the lowest impact?

- A. Situation 1 B. Situation 2 C. Situation 3 D. Situation 4

Use the following information to answer question 91-92

The scientist selects the bullets to fire to the planetoid that moving to earth for changing direction to 90° from the previous direction.

- Bullet 1: a diamond bullet 200 kg fire with speed 300 m/s. The result of fire: the bullet get through the planetoid with speed 290 m/s, the bullet is remain the same
- Bullet 2: a diamond bullet 100 kg fire with speed 300 m/s. The result of fire: the bullet get through the planetoid with speed 290 m/s, the bullet is remain the same.
- Bullet 3: an aluminum bullet 200 kg fire with speed 300 m/s. The result of fire: the bullet was destroyed when hitting at the surface of the planetoid.
- Bullet 4: an aluminum bullet 100 kg fire with 300 m/s. The result of fire: the bullet was destroyed when hitting at the surface of the planetoid.

91. Which bullet is most effective of this mission?

- A. Bullet 1 B. Bullet 2 C. Bullet 3 D. Bullet 4

92. Which bullet is less effective of this mission?

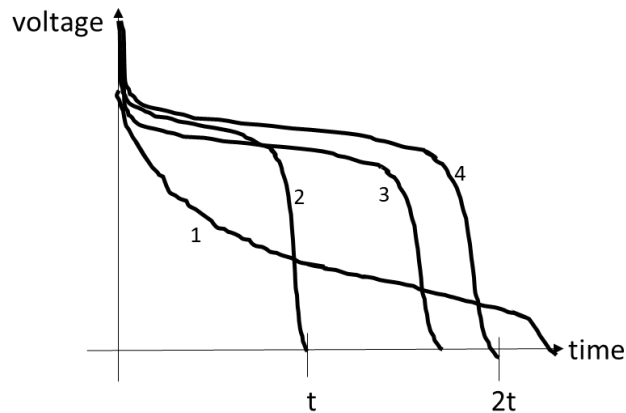
- A. Bullet 1 B. Bullet 2 C. Bullet 3 D. Bullet 4

Use the following information to answer question 93 - 94

93. Which planet that would cause the bullet to go the farthest, given the atmospheric pressure at 0 (zero) along the trajectory of the fired bullet?

- A. Mars B. Moon C. Jupiter D. Earth E. Ceres (dwarf planet)

There are 4 different batteries with different price as shown below.



Battery	Price
1	150
2	100
3	120
4	200

94. Which battery we should buy if considering only the capacity.

- A. Battery 1 B. Battery 2 C. Battery 3 D. Battery 4 E. any battery

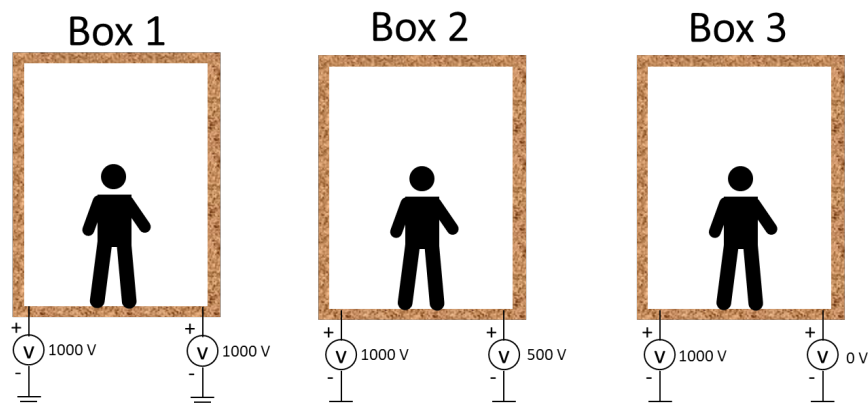
95. which battery is hottest when using with Incandescent flashlight?

- A. Battery 1 B. Battery 2 C. Battery 3 D. Battery 4 E. any battery

96. which battery can be use longest when use with Incandescent flashlight?

- A. Battery 1 B. Battery 2 C. Battery 3 D. Battery 4 E. any battery

Use the following information to answer question 97 - 98



97. Which box can make the people inside survive?

- A. Box1 B. Box2 C.Box 3 D. Everybody survive.

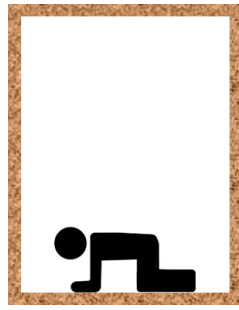
98. If we stay in a danger box, what is the position that we should do to have a chance to survive?



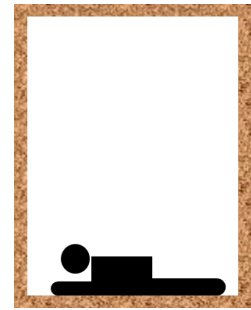
A



B

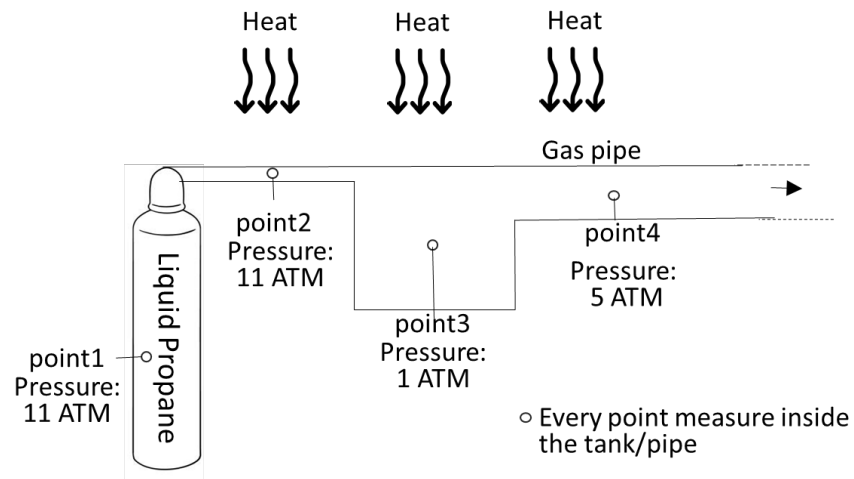


C



D

Use the following picture to answer question 99 - 100



99. Which point is the lowest temperature?

- A. Point1 point B. Point 2 C. Point 3 D. Point 4 E. Same temperature at every point

100. Which point is the highest temperature?

- A. Point1 point B. Point 2 C. Point 3 D. Point 4 E. Same temperature at every point