



ASVAB-SECTION-3^{Q&As}

ASVAB Section Three : Mechanical Comprehension

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QUESTION 1

A string of six gears exists, with each gear turning in conjunction with one another.

Which gears operate in the same rotation?

- A. Gears 1, 2, and 3
- B. Gears 1, 3, and 5
- C. Gears 3, 4, and 5
- D. Gears 2, 4, and 5

Correct Answer: B

QUESTION 2

The gas gauge in an auto relies on what mechanical device to measure the amount of gas in the tank?

- A. ball and cock
- B. automatic valve
- C. float
- D. mechanical switch

Correct Answer: C

A float indicates the level of liquid in a container.

QUESTION 3

Normally, atmospheric pressure is approximately _____.

- A. 14.7 psi
- B. 23.2 psi
- C. 7.0 psi
- D. 10.1 psi

Correct Answer: A

"Normal" atmospheric pressure is 14.7 psi.

QUESTION 4



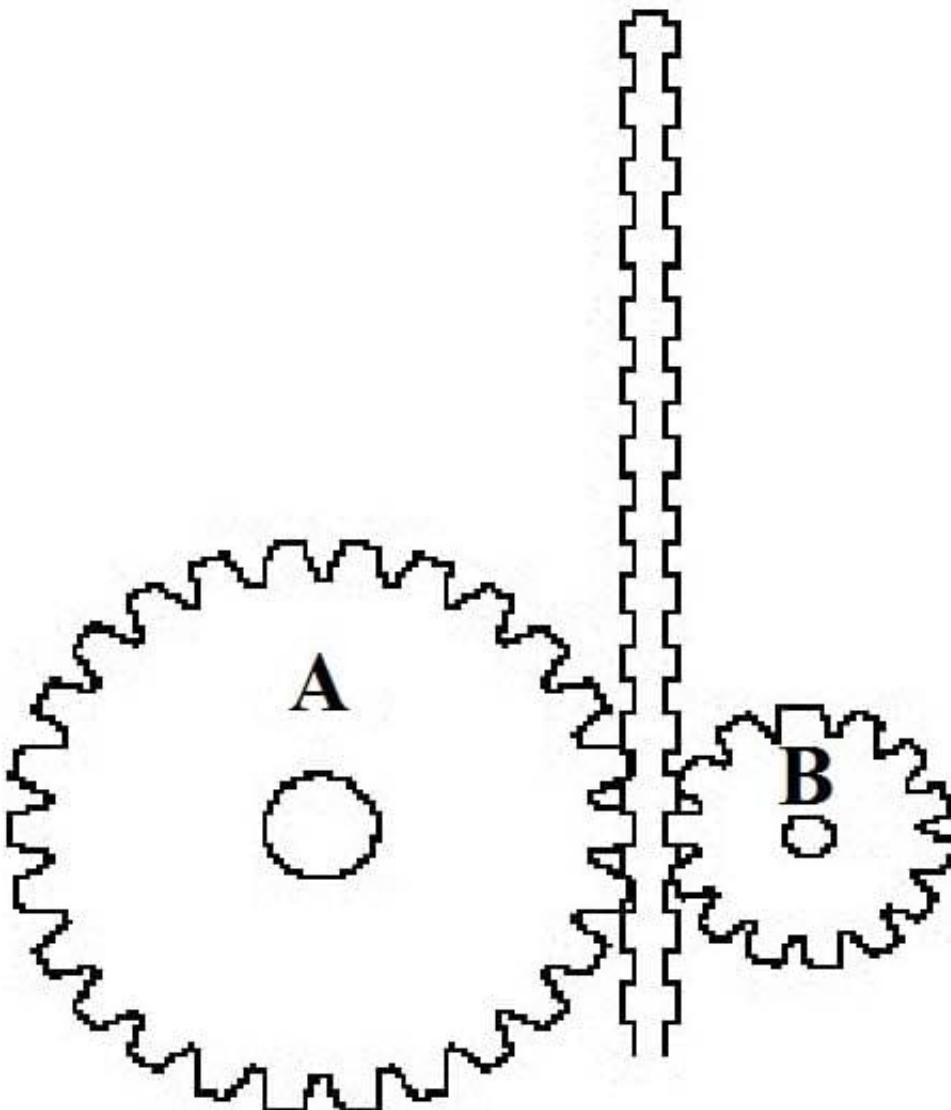
The center of gravity of a baseball bat would be best described as _____.

- A. near the skinny end
- B. at the top
- C. near the fat end
- D. near the grip

Correct Answer: C

The center of gravity is the place on an object where there is equal weight on either side.

QUESTION 5



In the figure above, if the cogs move up the track at the same rate of speed, Cog A will _____.

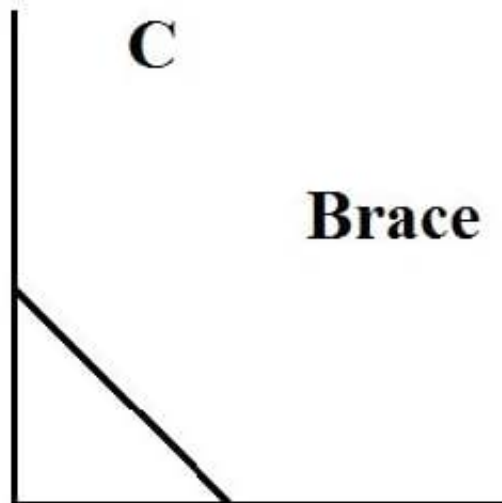
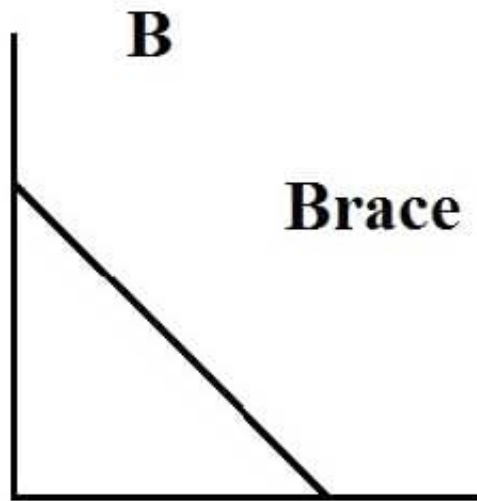
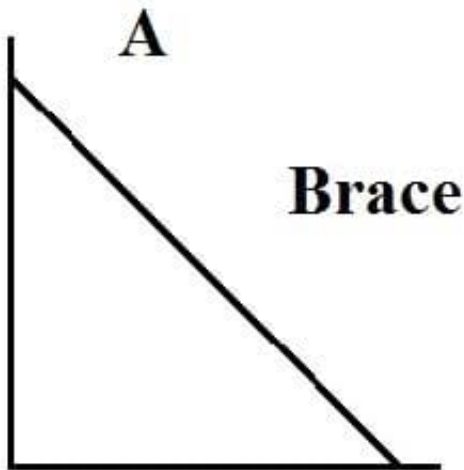


- A. reach the top at the same time as Cog B
- B. reach the top after Cog B
- C. reach the top before Cog B
- D. have greater difficulty staying on track

Correct Answer: C

The larger cog (Cog A) covers a greater linear distance in a given period of time.

QUESTION 6



In the figure above, which angle is braced most solidly?

A. A

B. B



C. C

D. All are braced equally solidly.

Correct Answer: A

The brace on Angle A covers more area of the angle, so it's more solidly braced.

QUESTION 7

What would happen to a balloon full of air if you moved it from above a water surface to ten feet below the water surface?

A. The balloon would explode.

B. The volume of the balloon would decrease.

C. The volume of the balloon would increase.

D. The volume of the balloon would stay the same.

Correct Answer: B

The volume of the balloon would decrease. The pressure of the water would press inward on the balloon and cause it to shrink in volume.

QUESTION 8

What are the potential functions of gear systems?

A. Gears may be used to change direction in machinery and can be used to increase speed.

B. Gears possess a single function: transmitting motion.

C. The potential functions of gears are: changes in direction, speed changes (both increases and decreases), and motion transmission.

D. Gears are primarily used for making changes in speed, but may also be used to instigate motion in machinery.

Correct Answer: C

QUESTION 9

Wheel A has a diameter of 10 feet. Wheel B has a diameter of 8 feet.

If both wheels revolve at the same rate, Wheel B will cover a linear distance of 16 feet _____.

A. at the same time as Wheel A

B. more slowly than Wheel A



- C. in twice the time as Wheel A
- D. faster than Wheel A

Correct Answer: B

Wheel B has to make more revolutions than Wheel A to cover the same amount of distance, so it will go slower.

QUESTION 10

A concrete beam has a maximum strength of 3,000 psi (pounds per square inch). In an experiment, a 500pound weight is placed in the center of the beam, and the stress in the beam is measured to be 1,000 psi.

If the stresses in the beam continue to increase at the same rate with added weight, how much additional weight can be added to the same location on the beam before the beam will break?

- A. 500 pounds
- B. 1,000 pounds
- C. 1,500 pounds
- D. 3,000 pounds

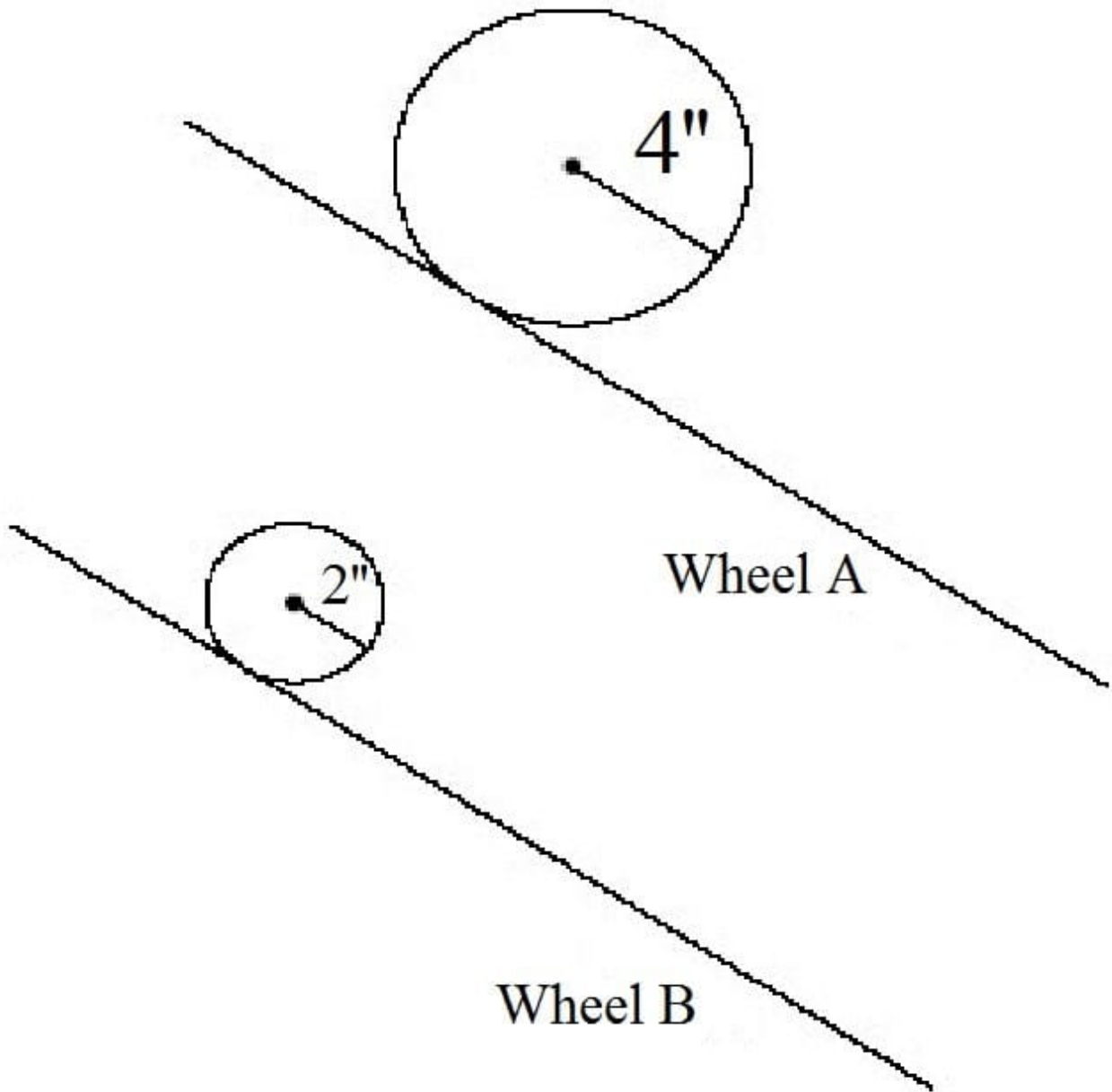
Correct Answer: B

The first 500 pounds generated 1,000 psi of stress in the beam; therefore, 500 more pounds will increase the total stress to 2,000 psi.

Another 500 pounds will increase the stress to 3,000 psi, which we are told is the maximum strength of the beam.

Therefore, the maximum additional load that can be applied to this beam before it breaks is 1,000 pounds.

QUESTION 11



If both Wheel A and Wheel B revolve at the same rate in the figure above, Wheel A will cover a linear distance of 12 feet _____.

- A. faster than Wheel B
- B. slower than Wheel B
- C. in about the same time as Wheel B
- D. half as quickly as Wheel B

Correct Answer: A

Wheel B has to make more revolutions to cover the same ground as Wheel A, so it will cover the distance more slowly.



QUESTION 12

Forces existing in pairs are sometimes called _____.

- A. action and interaction
- B. reaction and interaction
- C. action and reaction
- D. friction and gravity

Correct Answer: C

A force cannot be exerted unless there is something there to push back. Forces exist in pairs. For every action there is a reaction.

QUESTION 13

An above-ground suburban water tank holds 540 gallons of water when full.

If the tank starts out full and is drained at a rate of 60 gallons per minute, how many seconds will it take to empty out halfway?

- A. 54
- B. 240
- C. 270
- D. 480

Correct Answer: C

540 gallons divided by 60 gallons a minute means that it takes nine minutes to drain the tank completely.

Half of that time is 4.5 minutes; 4.5 multiplied by 60 seconds equals 270 seconds.

QUESTION 14

A pump is typically used to accomplish which of the following tasks?

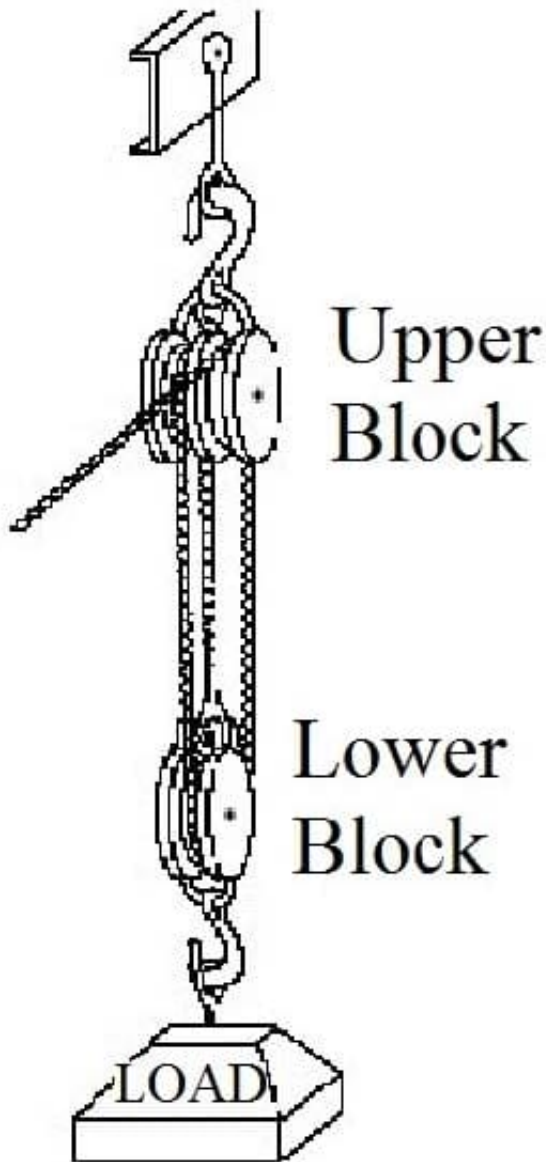
- A. to clarify liquids
- B. to separate liquids
- C. to move liquids downhill
- D. to move liquids uphill

Correct Answer: D



Pumps are not used to move liquids downhill because liquids will flow downhill by gravity. Also, pumps do not separate or clarify liquids; instead, they agitate and mix liquids.

QUESTION 15



The mechanical advantage of the block-and-tackle arrangement shown above is _____.

- A. 2
- B. 4
- C. 6
- D. 1

Correct Answer: A



Because this block-and-tackle arrangement merely changes the direction of the pull, it has a mechanical advantage of only 2.

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