

# ASVAB Section 3: Mechanical Comprehension

1. An induction clutch works by \_\_\_\_\_.

A. magnetism

B. pneumatics

C. hydraulics

D. friction

**Answer(s):** A

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2. If a first class lever with a resistance arm measuring 2 feet and an effort arm measuring 8 feet are being used, what's the mechanical advantage?

A. 2

B. 4

C. 6

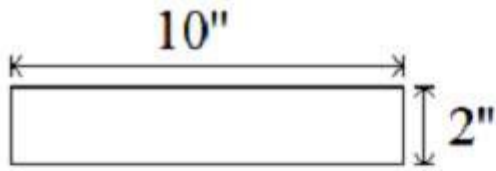
D. 1

**Answer(s):** B

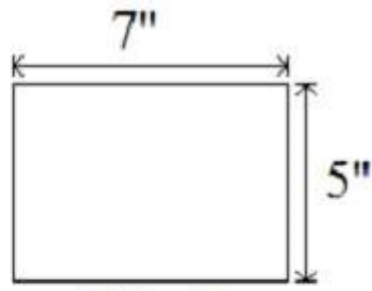
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3. The bottoms of four boxes are shown above. The boxes all have the same volume. If postal regulations state that the sides of a box must meet a minimum height, which box is most

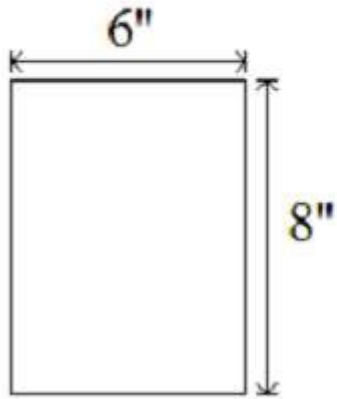
likely to be too short to go through the mail?



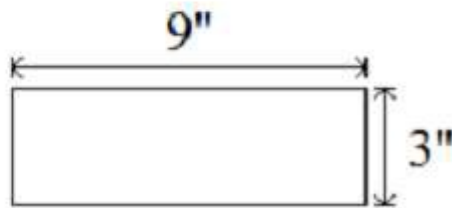
NO. 1



NO. 2



NO. 3



NO. 4

A. NO. 4

B. NO. 2

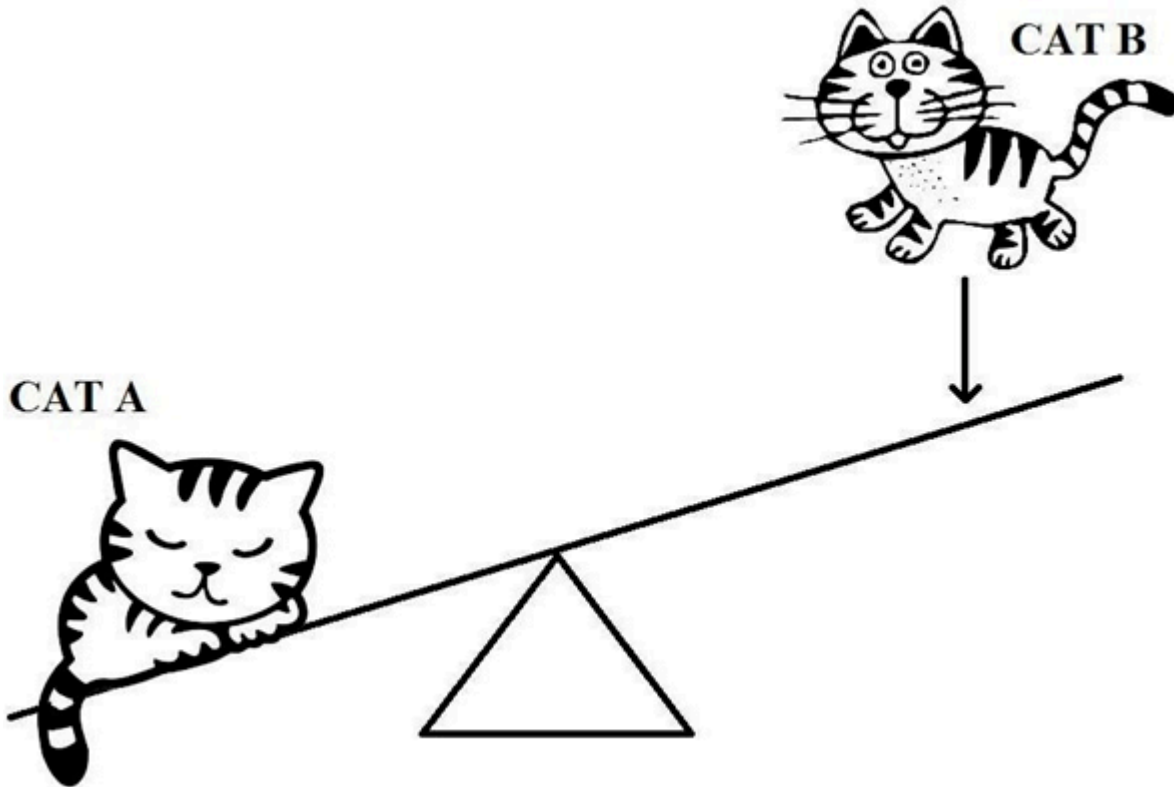
C. NO. 1

D. NO. 3

Answer(s): D

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4. Looking at the figure above, when Cat B lands on the seesaw, Cat A will .



A. remain stationary

B. hit the ground hard

C. rise in the air quickly

D. enter the stratosphere

**Answer(s): C**

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5. Air weighs about 15 psi.

What's the amount of pressure (force) exerted on the top of your head, given a surface area of 24 inches?

A. 360 pounds

B. 625 pounds

C. 58 pound

D. 180 pounds

Answer(s): A

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6. The force produced when a boxer's hand hits a heavy bag and "bounces" off it is called \_\_\_\_\_.

A. static electricity

B. magnetism

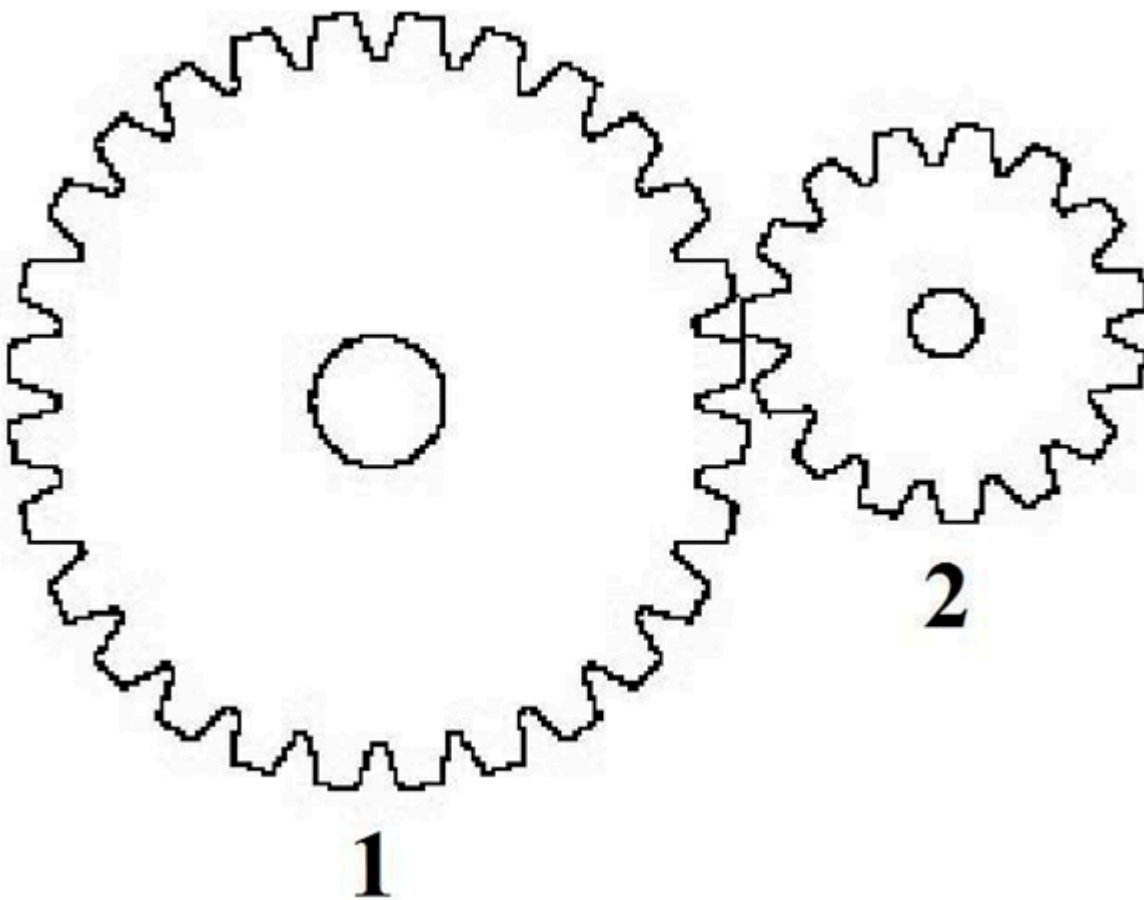
C. recoil

D. gravity

Answer(s): C

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7. In the figure above, if Gear 1 has 25 teeth and Gear 2 has 15 teeth, how many revolutions does Gear 2 make for every 10 revolutions Gear 1 makes?



A. about 162/3

B. 12

C. about 1/3 more

D. about 20

**Answer(s): A**

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**8.** A cubic foot of water weighs about 62.5 pounds.

If an aquarium is 18 feet long, 10 feet deep, and 12 feet wide, what's the approximate pounds-per-square-inch pressure (psi) on the bottom of the tank?

A. 2 psi

B. 4 psi

C. 5 psi

D. 7 psi

**Answer(s): B**

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**9.** Springs used in machines are usually made of \_\_\_\_\_.

A. plastic

B. bronze

C. nylon fiber

D. steel

**Answer(s): D**

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**10.** A clutch is a type of \_\_\_\_\_.

A. universal joint

B. coupling

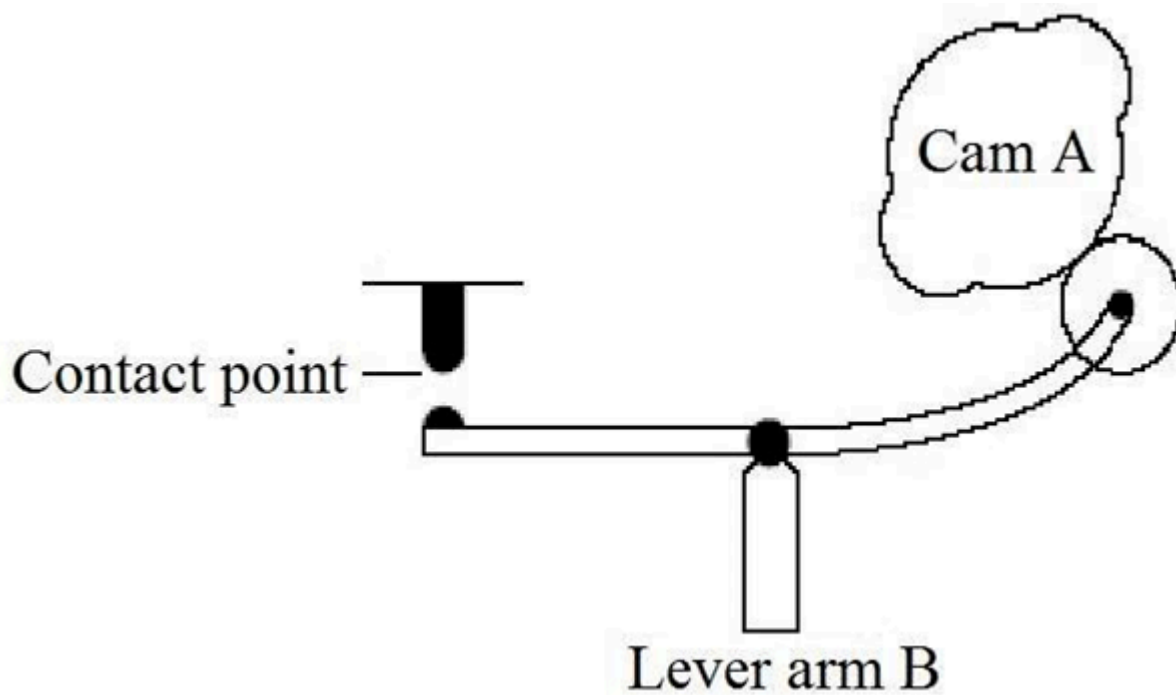
C. gear differential

D. cam follower

**Answer(s): B**

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11. When Cam A completes one revolution, the lever will touch the contact point \_\_\_\_\_.



A. once

B. never

C. four times

D. twice.

**Answer(s): D**

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12. A single block-and-fall is called a \_\_\_\_\_.

A. fixed pulley

B. gun tackle

C. runner

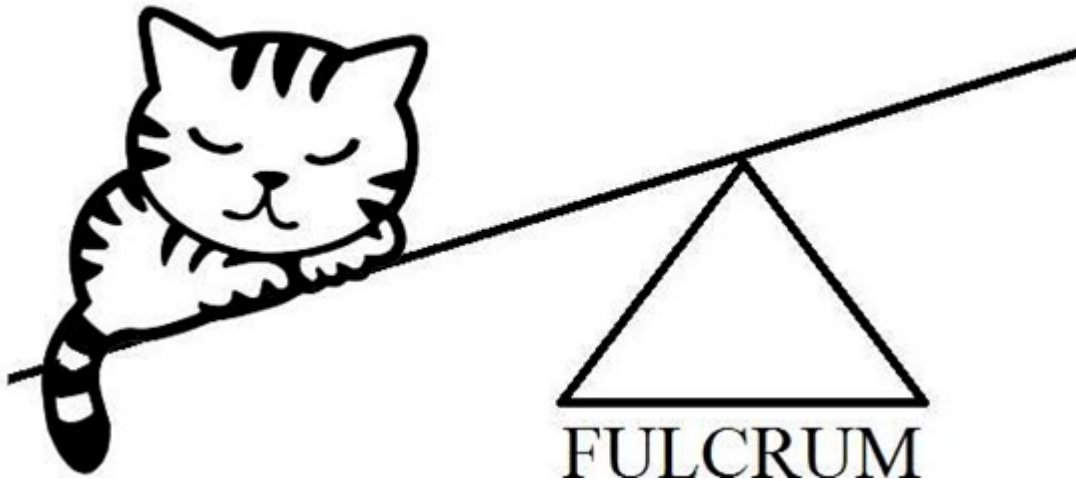
D. sheave

**Answer(s): C**

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**13.** In the figure above, if the fulcrum supporting the lever is moved closer to the cat, the cat will be \_\_\_\_\_.

**CAT**



A. easier to lift and will move higher

B. harder to lift but will move higher

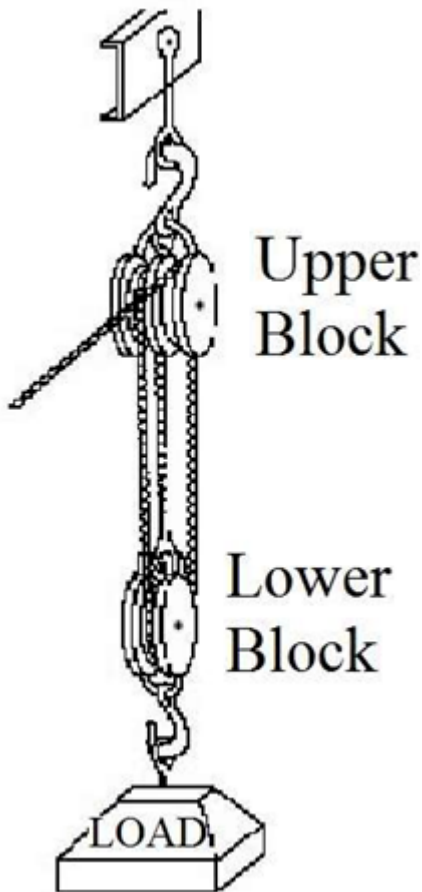
C. easier to lift but will not move as high

D. harder to lift and will not move as high

**Answer(s): C**

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14. The mechanical advantage of the block-and-tackle arrangement shown above is \_\_\_\_\_.



A. 2

B. 4

C. 6

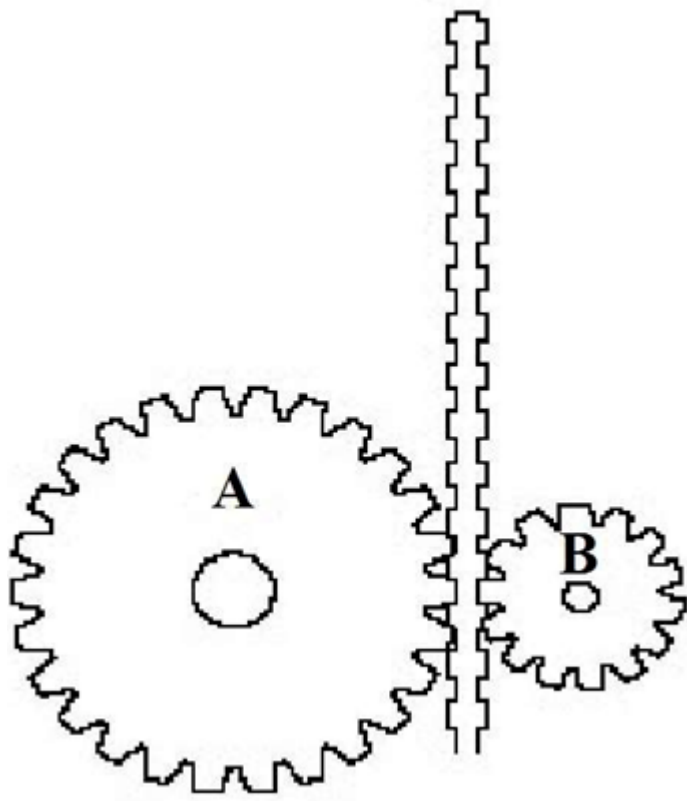
D. 1

**Answer(s):** A

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15. 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

**Answer(s): C**

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**16.** If a house key, a wooden spoon, a plastic hanger, and a wool jacket are all the same temperature, which one feels the coldest?

A. key

B. spoon

C. hanger

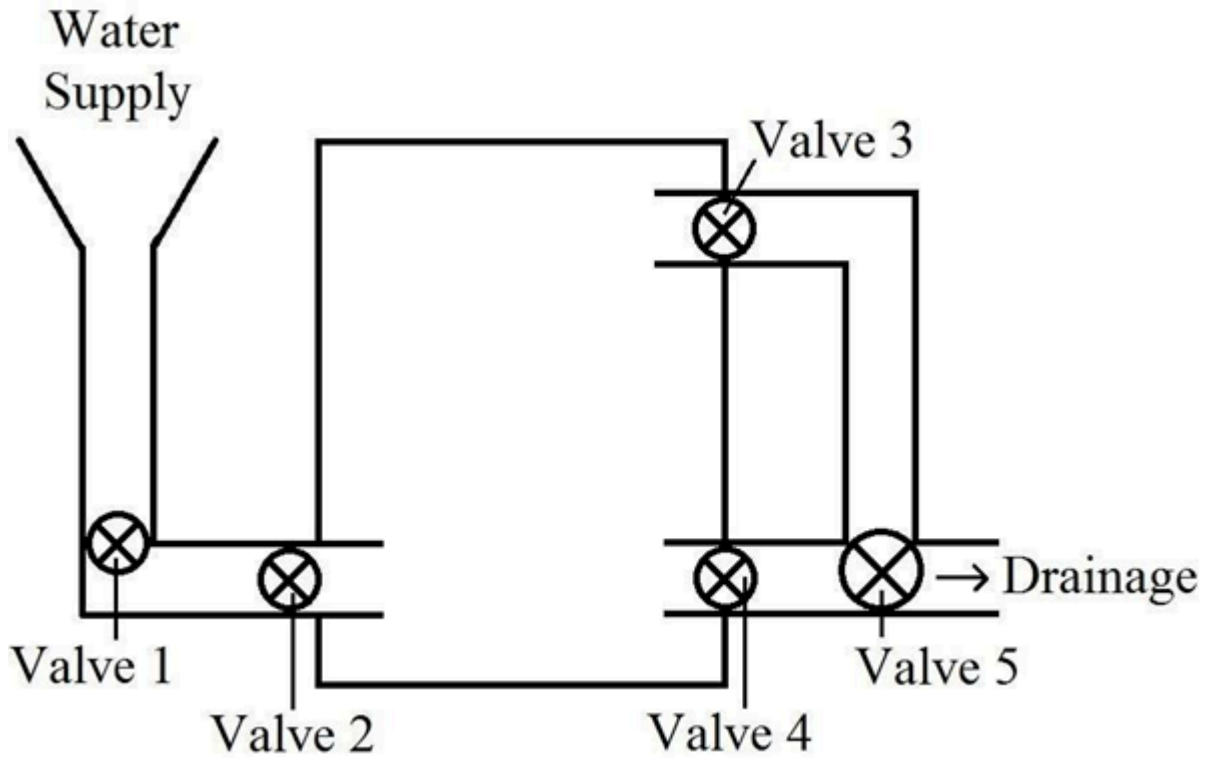
D. jacket

Answer(s): B

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17. In the figure above, assume the valves are all closed.

To fill the tank, but to prevent it from filling entirely, which valves should be open?



A. 1 and 2 only

B. 1, 2, and 3 only

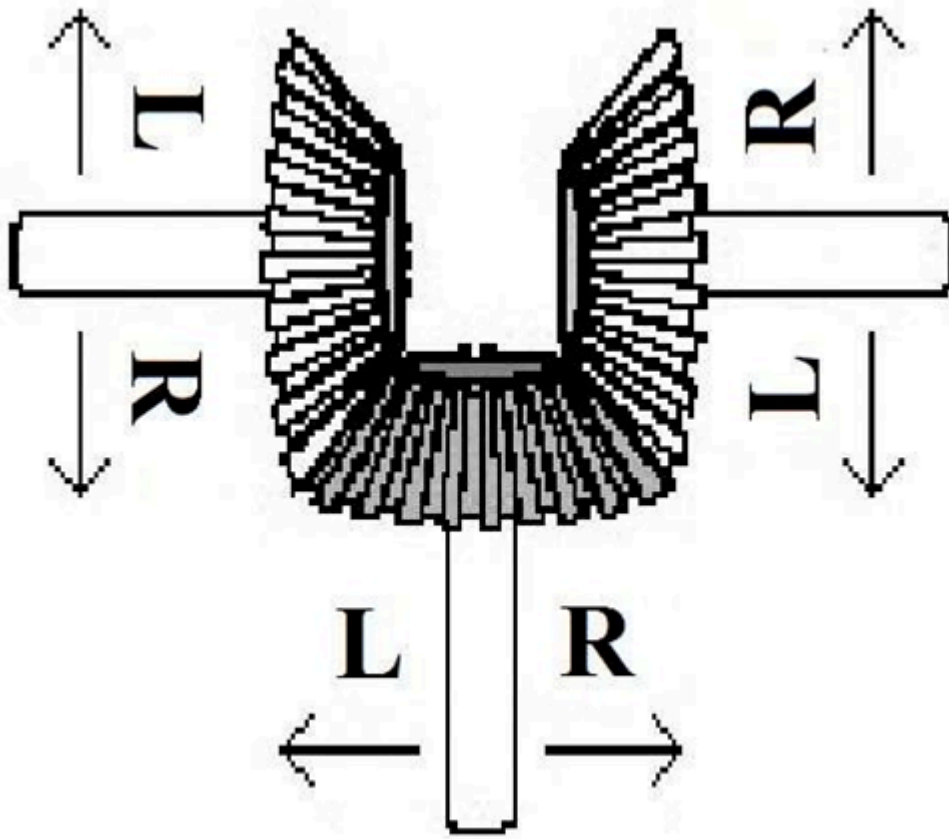
C. 1, 2, and 4 only

D. 1, 2, 3, and 5 only

Answer(s): D

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18. If Gear A is turned to the left \_\_\_\_\_.



A. Gear B turns to the right and Gear C turns to the left.

B. Gear B turns to the left and Gear C turns to the left.

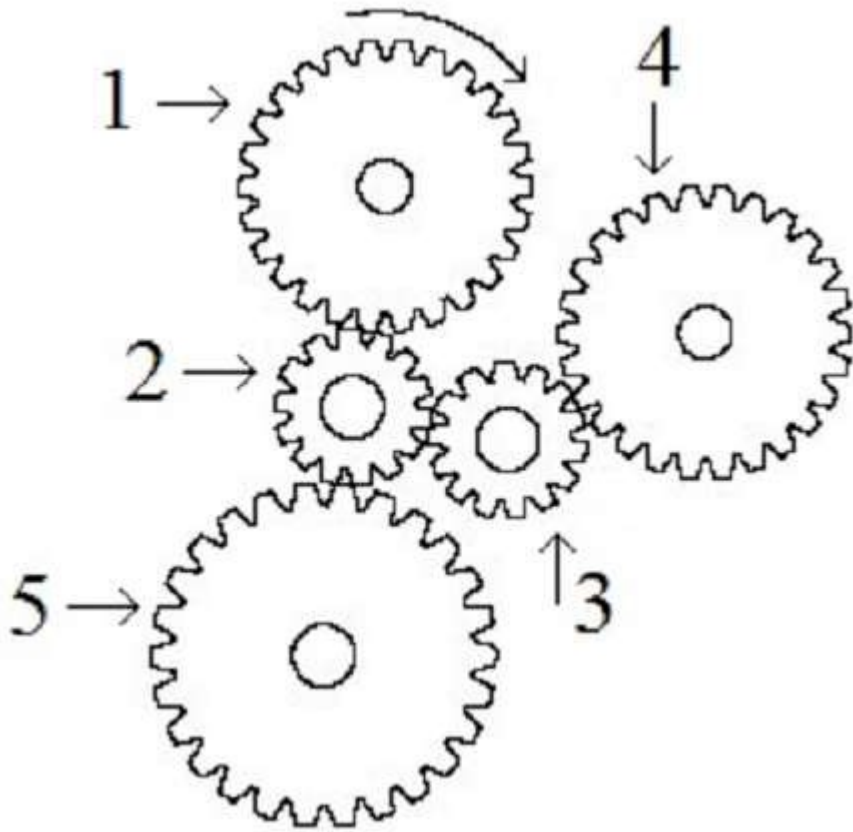
C. Gear B turns to the right and Gear C turns to the right.

D. Gear B turns to the left and Gear C turns to the right.

**Answer(s):** A

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19. If Gear 1 moves in a clockwise direction, which other gears also turn clockwise?



A. 3 and 5

B. 3, 4, and 5

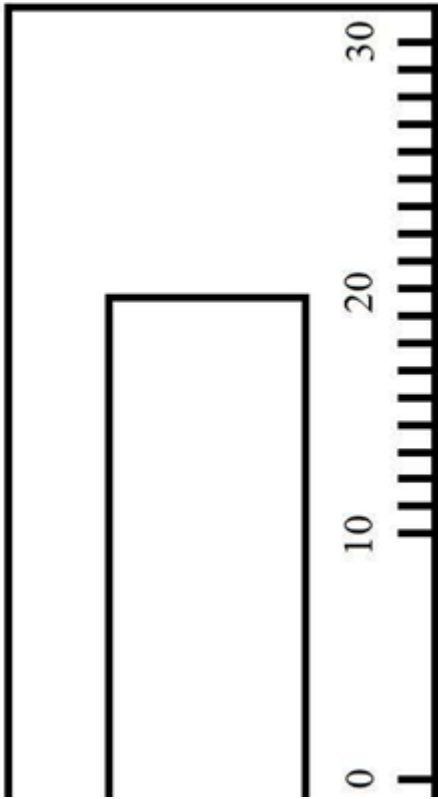
C. 2 and 5

D. 3 and 4

**Answer(s):** A

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20. The pressure gauge in the figure above shows a reading of \_\_\_\_\_.



A. 15.0

B. 19.5

C. 21.0

D. 23.0

**Answer(s): C**

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