

* 30 minutes to complete *

DO NOT MAKE ANY
MARKS IN THIS
BOOKLET

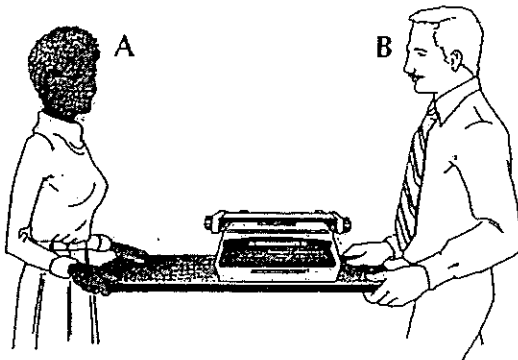
MECHANICAL REASONING

MARK YOUR ANSWERS
ON THE SEPARATE
ANSWER SHEET

DIRECTIONS

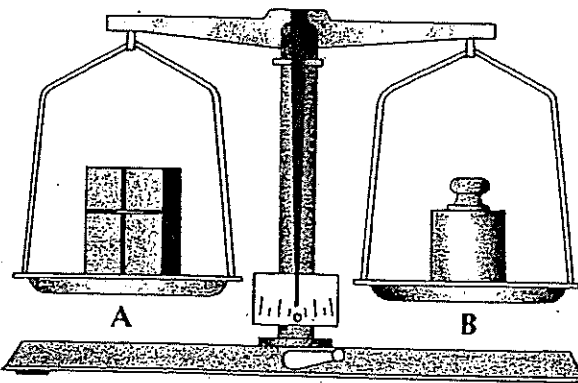
Find the space for Mechanical Reasoning on the Answer Sheet.

This test consists of a number of pictures and questions about those pictures. Look at the two examples below, to see just what to do.



Example X.

Which person has the heavier load?
(If equal, mark C.)



Example Y.

Which weighs more?
(If equal, mark C.)

Example X shows a picture of two people carrying a typewriter on a board and asks, **Which person has the heavier load?** (If equal, mark C.) Person B has the heavier load because the weight is closer to him than to person A. Therefore, the circle for B has been filled in on line X of your Answer Sheet.

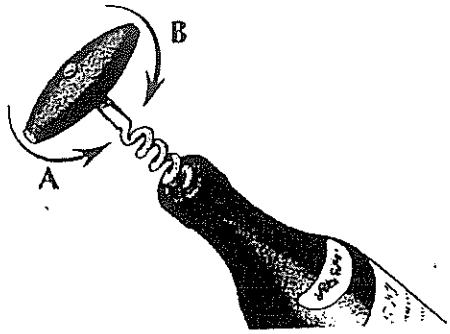
Now do the next one, Example Y, yourself. Mark the correct space on line Y of your Answer Sheet.

Example Y asks, **Which weighs more?** (If equal, mark C.) As the scale is perfectly balanced, A and B must weigh the same, so you should have filled in the circle for C on line Y of your Answer Sheet.

On the following pages there are more pictures and questions. Read each question carefully, look at the picture, and mark your answer on the Answer Sheet. Do not forget that there is a third choice for every question.

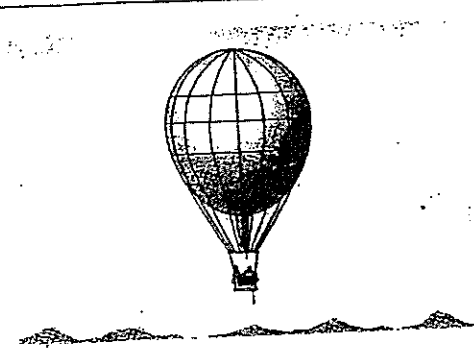
You will have 30 minutes for this test. Work as rapidly and as accurately as you can. If you are not sure of an answer, mark the choice that is your best guess.

DO NOT TURN THE PAGE UNTIL YOU ARE TOLD TO DO SO.



1.

In which direction should the corkscrew be turned to work it further into the cork?
(If either, mark C.)



2.

For this balloon to stay up, the gas in the bag must be:
(A) heavier than the surrounding air;
(B) lighter than the surrounding air;
(C) the same as the surrounding air.



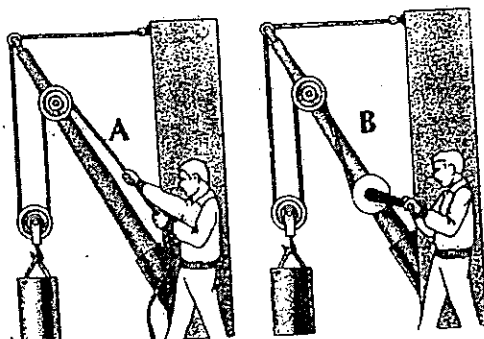
3.

Which is the better way for an astronaut to signal to a companion on the moon?
(If no difference, mark C.)



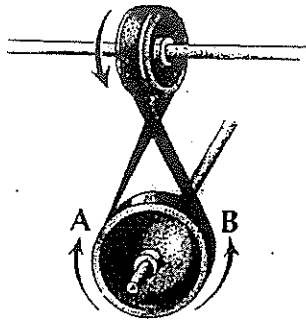
4.

Which truck will turn over more easily?
(If no difference, mark C.)



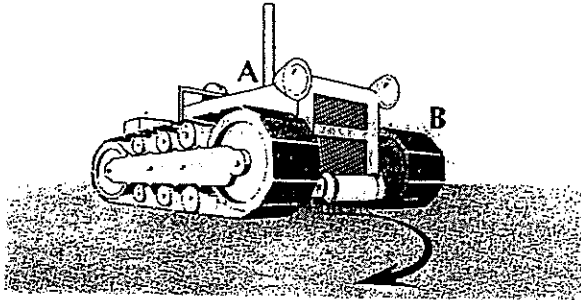
5.

Which person can lift the weight more easily?
(If no difference, mark C.)



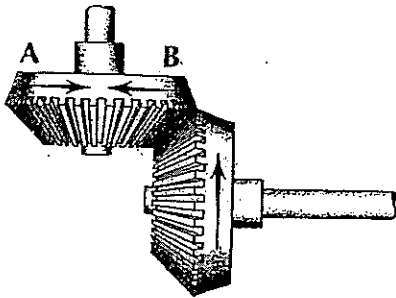
6.

When the top pulley turns in the direction shown, which way will the lower pulley turn?
(If either, mark C.)



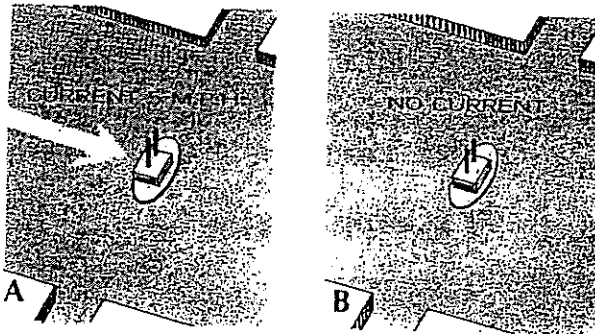
7.

Which tread should move more slowly for the tractor to turn in the direction shown?
(If neither, mark C.)



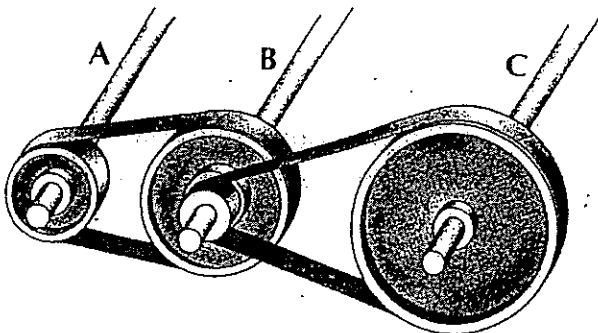
8.

When the right-hand gear turns in the direction shown, which way does the top gear turn?
(If neither, mark C.)



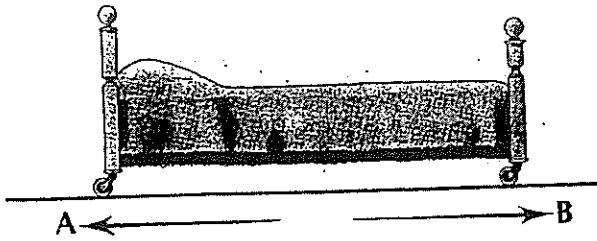
9.

In which picture can the ferry cross the river more quickly?
(If no difference, mark C.)



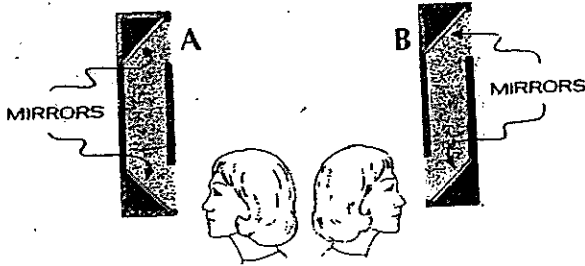
10.

Which shaft will turn most slowly?



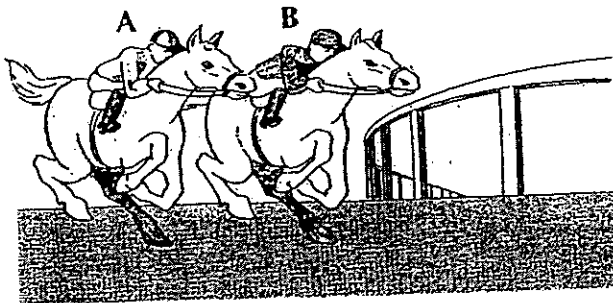
11.

Which way has this bed just been rolled?
(If either, mark C.)



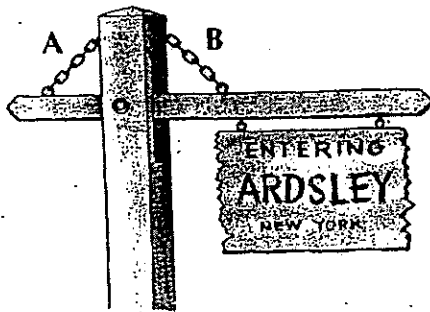
12.

In which picture can the woman see what is happening behind her?
(If no difference, mark C.)



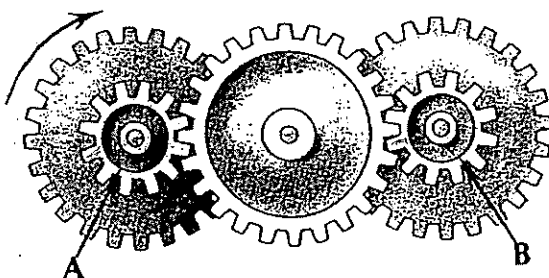
13.

Which horse must go faster to hold its place on the turn?
(If neither, mark C.)



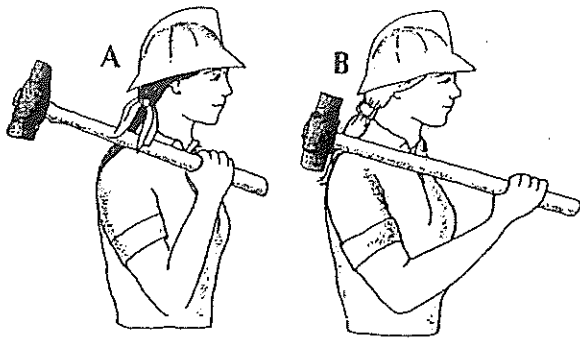
14.

Which chain alone will hold up the sign?
(If either, mark C.)



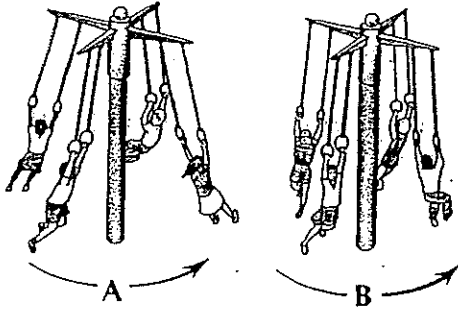
15.

Which gear turns more slowly?
(If no difference, mark C.)



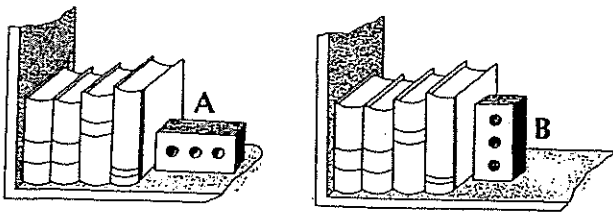
16.

Which is the harder way to carry the hammer?
(If no difference, mark C.)



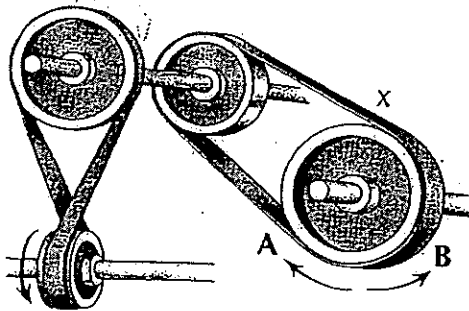
17.

In which picture are the children whirling faster?
(If equal, mark C.)



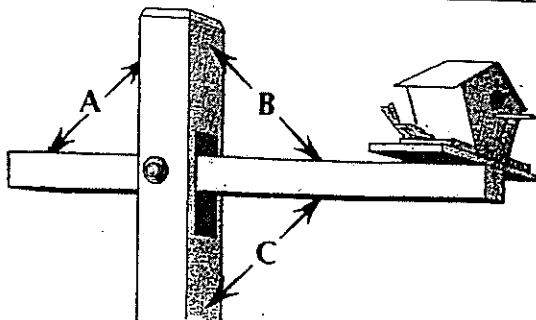
18.

In which picture are the books more likely to knock over the bookend?
(If no difference, mark C.)



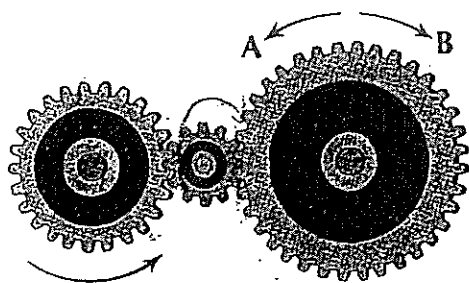
19.

Which way will pulley "X" turn?
(If either, mark C.)



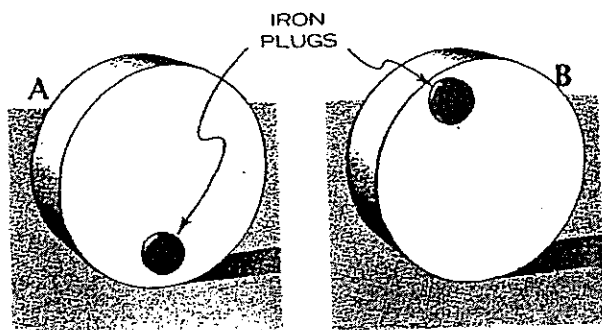
20.

Which letter shows the best place for a chain support?



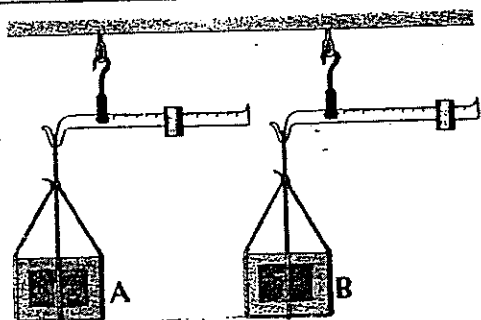
21.

When the left-hand gear turns in the direction shown, which way does the right-hand one turn?
(If either, mark C.)



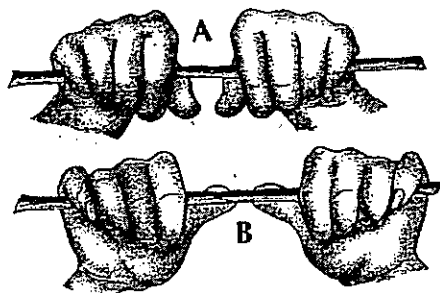
22.

Which picture shows how this wooden circle will stand?
(If neither, mark C.)



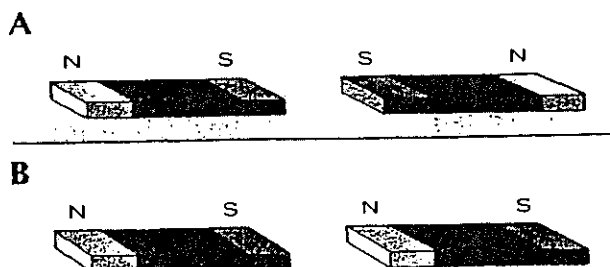
23.

Which box weighs more?
(If equal, mark C.)



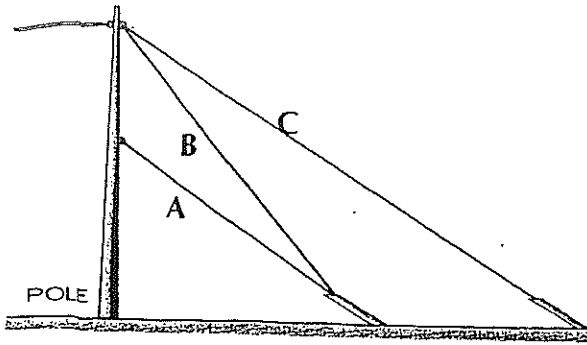
24.

Which is the easier way to break the twig?
(If no difference, mark C.)



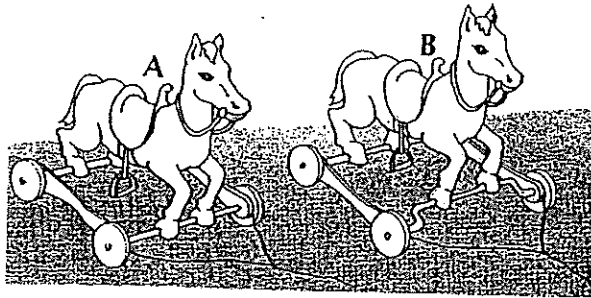
25.

In which picture are the magnets placed so as to attract each other?
(If both, mark C.)



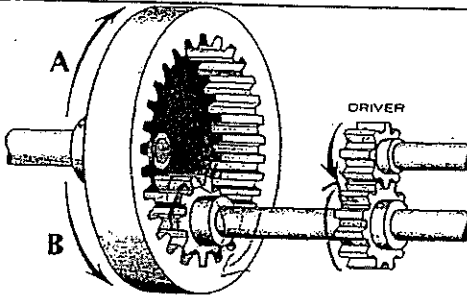
26.

Which one piece of cable will give this pole the best support?



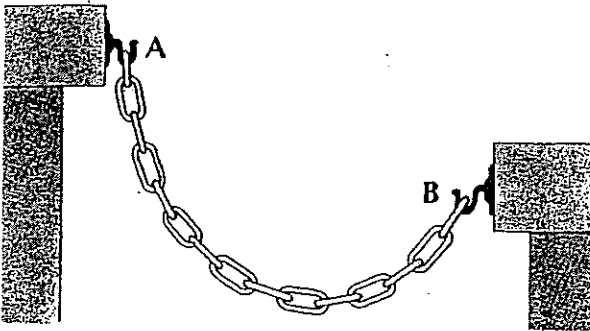
27.

Which horse will jump more when it is pulled?
(If no difference, mark C.)



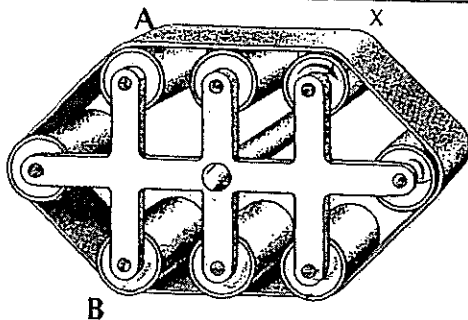
28.

When the driver turns in the direction shown, which way will the left-hand gear turn?
(If either, mark C.)



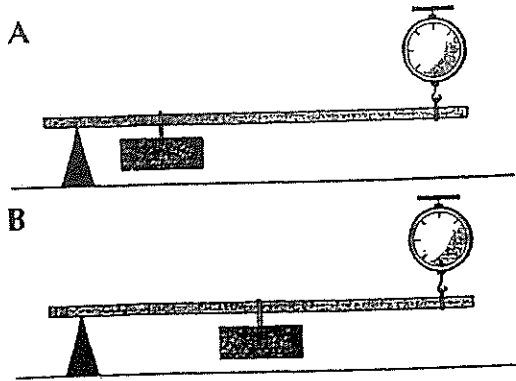
29.

Which hook supports more weight?
(If no difference, mark C.)



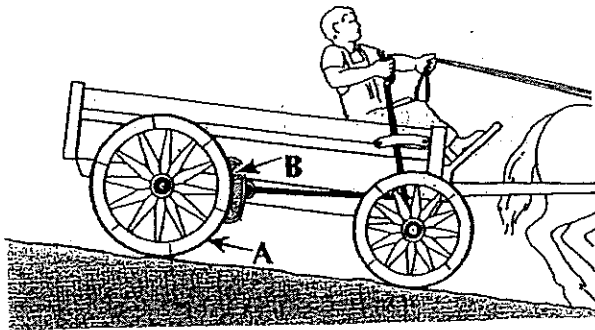
30.

Which roller turns the same way as the roller at "X"?
(If both, mark C.)



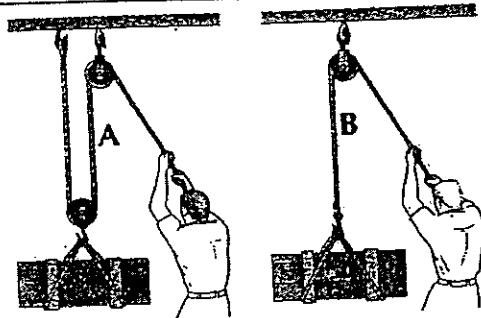
31.

In which picture will the scales read higher (more weight)?
(If equal, mark C.)



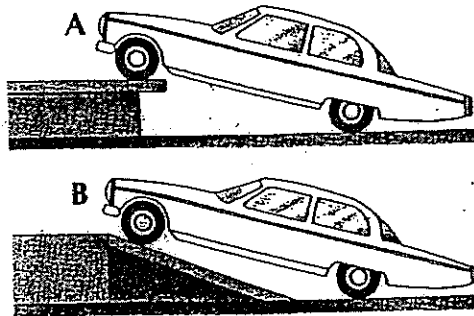
32.

When the brake is put on, which part gets hotter?
(If no difference, mark C.)



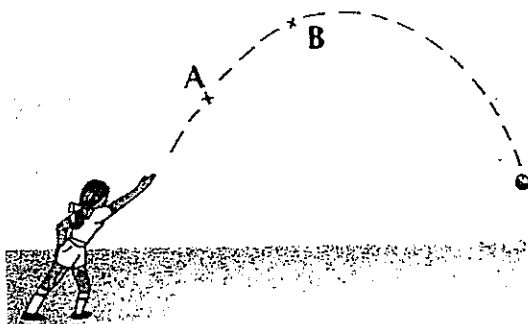
33.

Which person must pull harder to lift the weight?
(If no difference, mark C.)



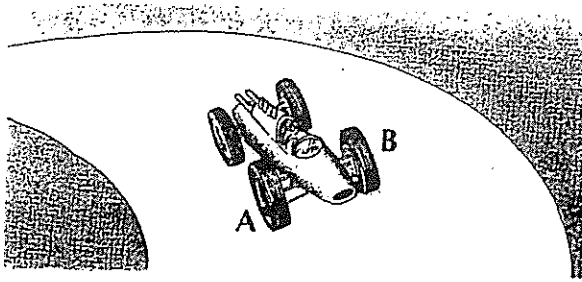
34.

Which car is less likely to roll?
(If no difference, mark C.)



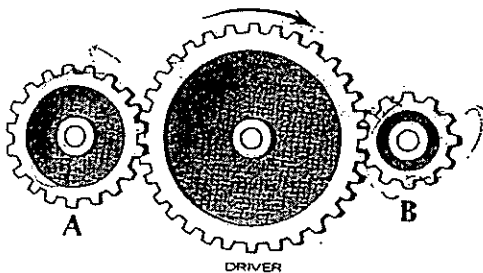
35.

At which point was the ball going faster?
(If no difference, mark C.)



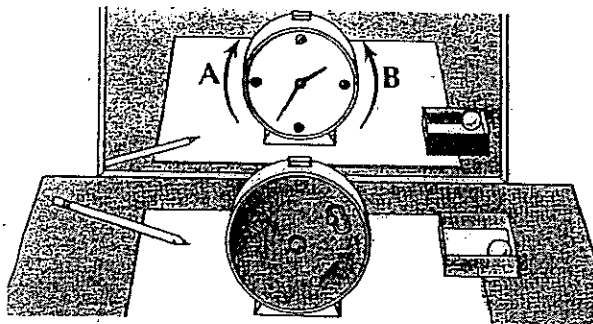
36.

In racing around this track, which wheel travels further?
(If equal, mark C.)



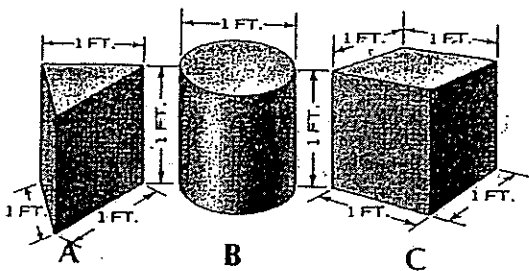
37.

Which gear turns the same way as the driver?
(If neither, mark C.)



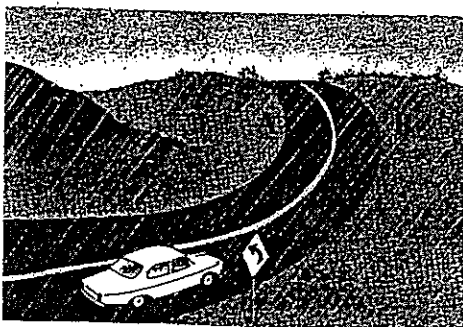
38.

Which way will the hands of this clock seem to turn when seen in the mirror?
(A) In direction A.
(B) In direction B.
(C) It depends on the time of day.



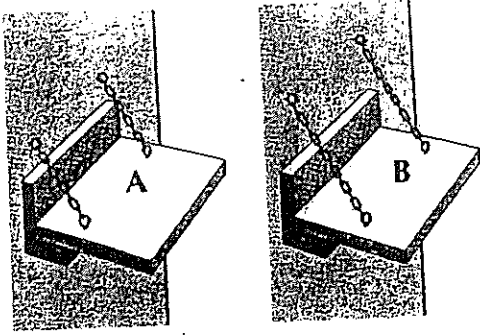
39.

Which weighs least?



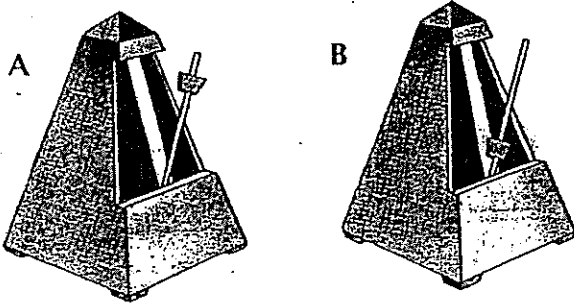
40.

Off which side of the road is the car more likely to skid?
(If no difference, mark C.)



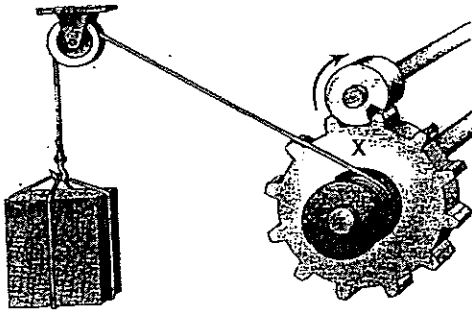
41.

Which shelf is stronger?
(If no difference, mark C.)



42.

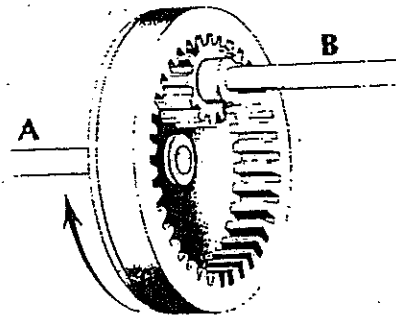
In which picture will the timer tick more slowly?
(If no difference, mark C.)



43.

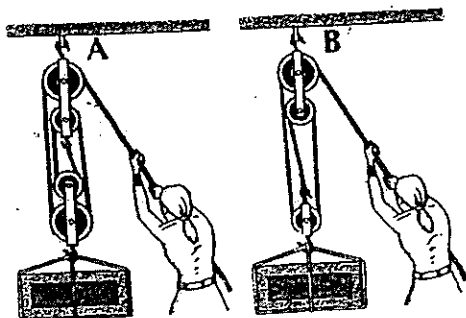
When the upper wheel turns in the direction shown, the top of wheel "X" will go:

- (A) steadily to the right;
- (B) steadily to the left;
- (C) by jerks to the left.



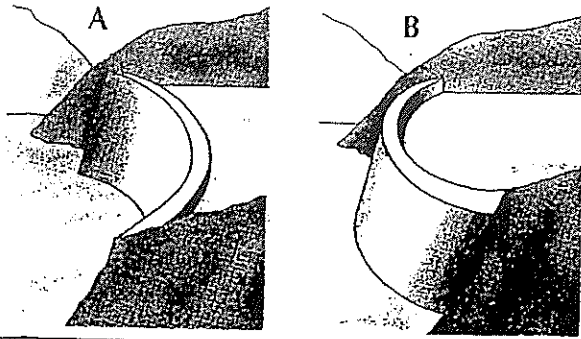
44.

Which shaft turns faster?
(If no difference, mark C.)

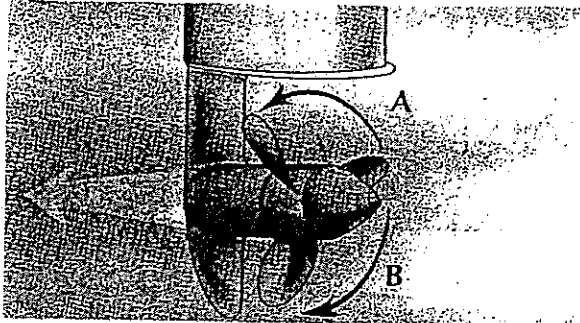


45.

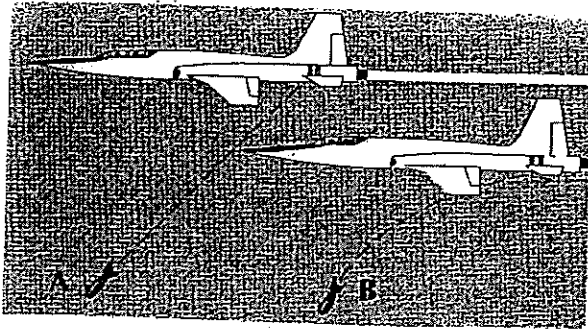
Which person can lift the load more easily?
(If no difference, mark C.)



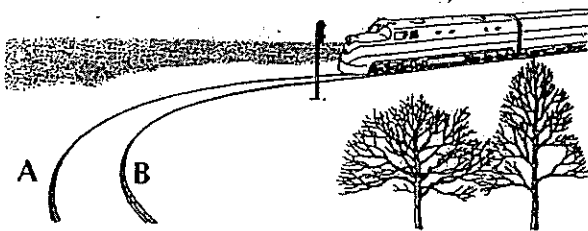
46.
Which dam is stronger?
(If no difference, mark C.)



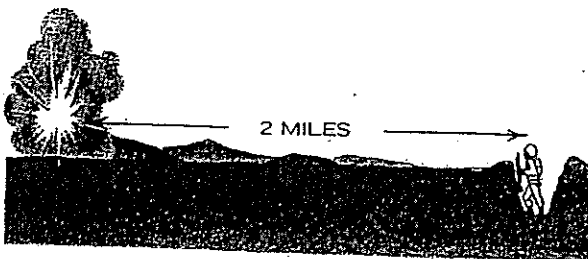
47.
Which way must the propeller turn in order to move a boat in the direction of the white arrow?
(If either, mark C.)



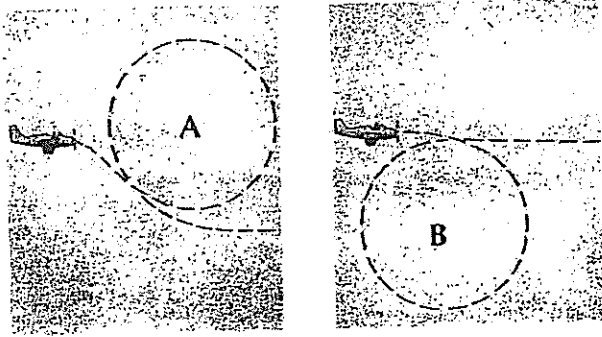
48.
Which drawing shows how a bomb really falls?
(If both, mark C.)



49.
Which rail should be higher?
(If neither, mark C.)

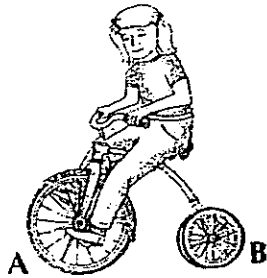


50.
When the shell bursts, the soldier will:
(A) hear it first;
(B) see it first;
(C) hear and see it at the same time.



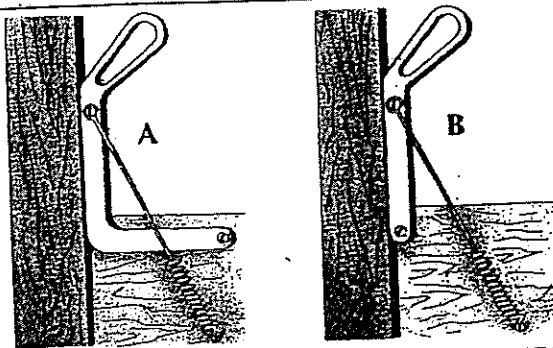
51.

In which loop is the pilot more likely to fall out of the plane?
(If no difference, mark C.)



52.

Which wheel will turn faster?
(If no difference, mark C.)



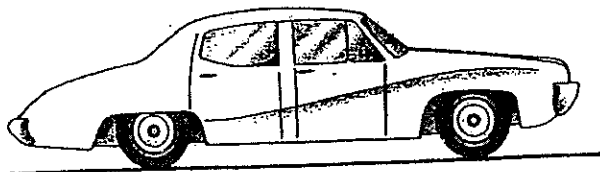
53.

In which picture will the spring hold the handle where it is now?
(If both, mark C.)



54.

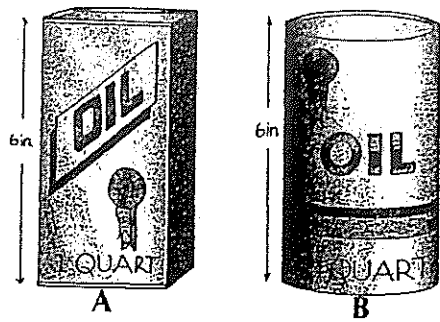
Which part of the refrigerator is colder?
(If no difference, mark C.)



55.

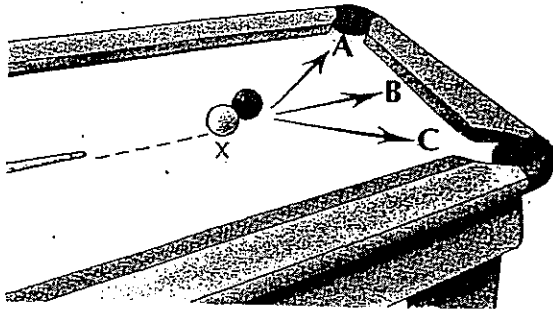
As this car picks up speed, the load on the front wheels is:

- (A) less;
- (B) greater;
- (C) unchanged.



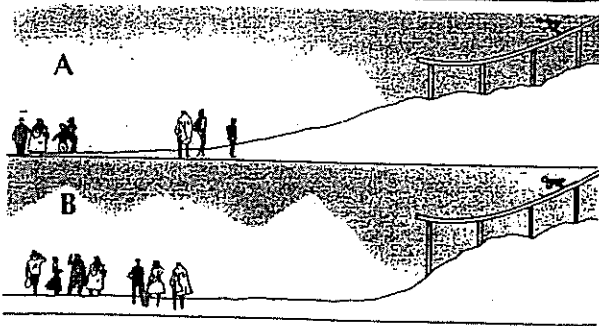
56.

Which shape container would use less metal?
(If equal, mark C.)



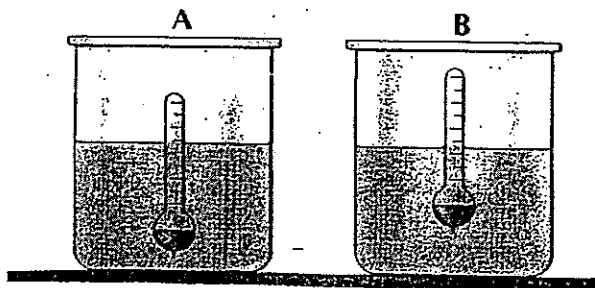
57.

After it hits the black ball, which way will ball "X" go?



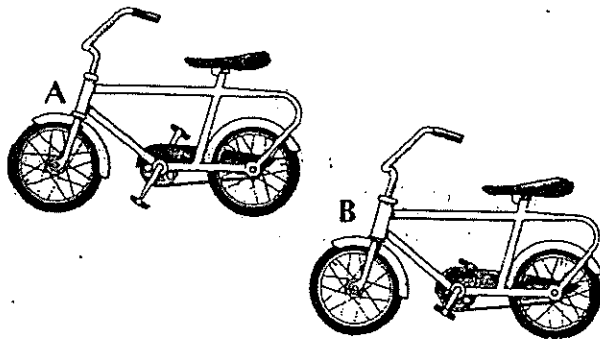
58.

Which picture shows how a ski jump is built?
(If either, mark C.)



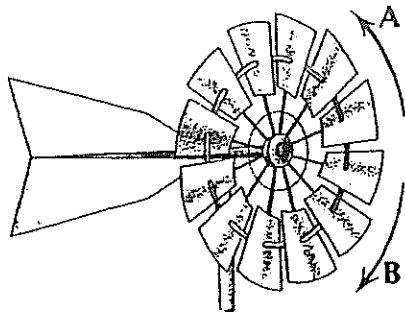
59.

In which jar is the liquid lighter?
(If equal, mark C.)



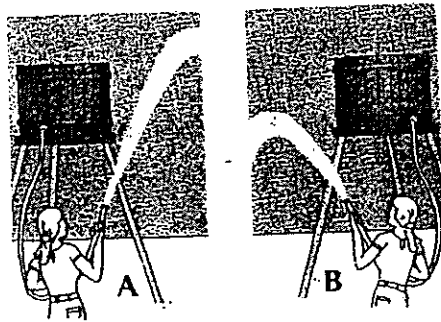
60.

With which bicycle can a child climb the steeper hill?
(If no difference, mark C.)



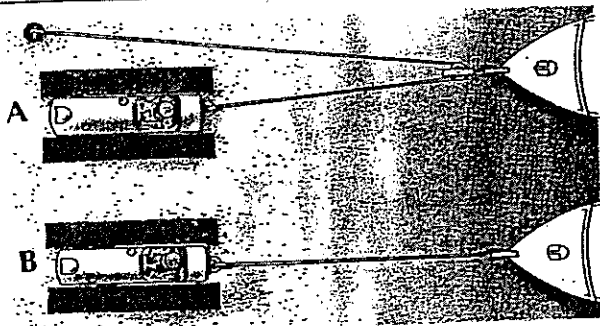
61.

In which direction is this windmill more likely to turn?
(If either, mark C.)



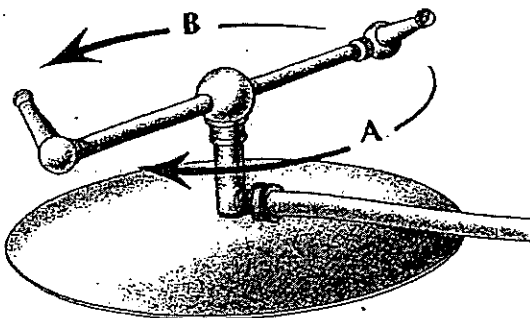
62.

Which picture is correct?
(If both, mark C.)



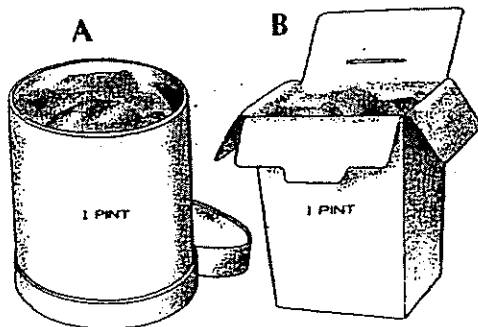
63.

Which tractor must go further to pull the boat up on the beach?
(If no difference, mark C.)



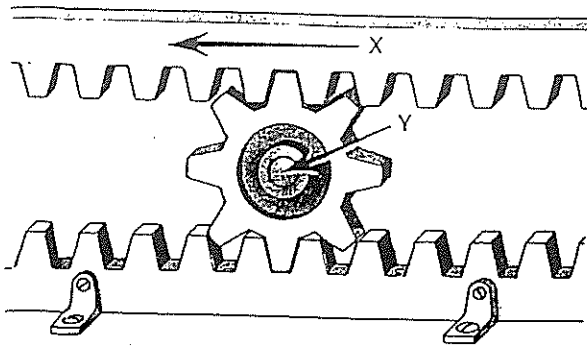
64.

When the water is turned on, which way will the sprinkler turn?
(If either, mark C.)



65.

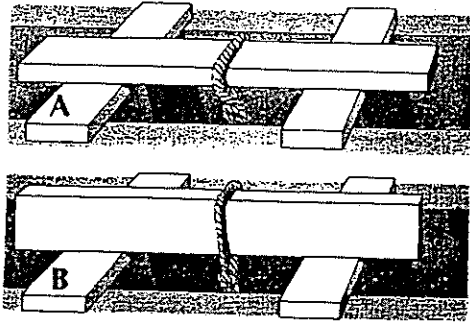
In which container will the ice cream stay hard longer?
(If no difference, mark C.)



66.

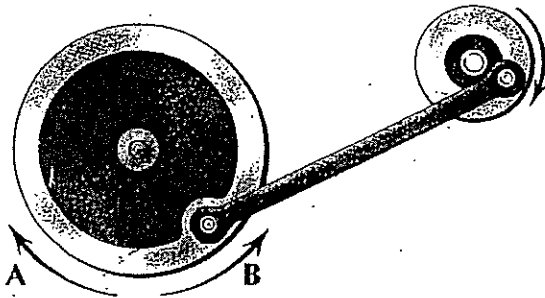
If "X" moves two feet in the direction shown, the center of the gear "Y" will move:

- (A) more than two feet;
- (B) less than two feet;
- (C) two feet.



67.

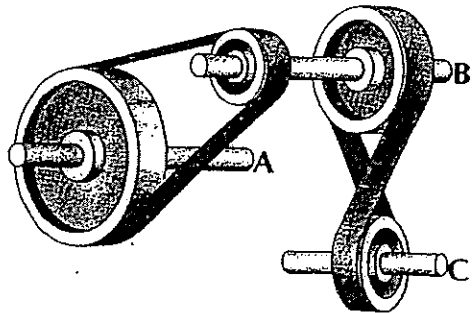
In which picture can you safely put a heavier weight on the rope?
(If no difference, mark C.)



68.

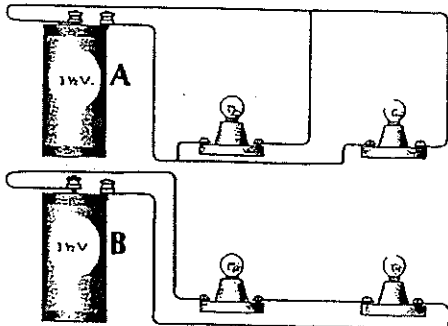
When the small wheel is turned around, the big wheel will:

- (A) turn in direction A;
- (B) turn in direction B;
- (C) move back and forth.



69.

Which shaft will turn most rapidly?



70.

Which picture shows the lamps connected to give the most light?
(If no difference, mark C.)

STOP. YOU MAY CHECK YOUR WORK ON THIS TEST. DO NOT TURN TO ANY OTHER TEST.

