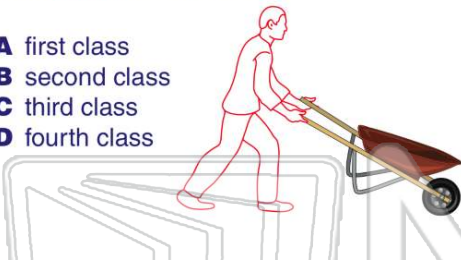




Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 A wheelbarrow is a type of **lever**. What **class** of lever is it?

- A first class
- B second class
- C third class
- D fourth class



2 Which combination of actions would **improve** the **efficiency** of a machine?

- A increase work input and decrease work output
- B decrease both work input and work output
- C decrease work input and maintain work output
- D increase work input and work output

3 A ramp is a form of inclined plane that **decreases work input** to move objects up and forward. Determine the **mechanical advantage** of the ramp below.

- A 0.25
- B 2
- C 5
- D 20



4 If someone is using an inclined plane, it is usually easier to lengthen the ramp than it is to decrease the height. Using the diagram below, **how many meters** would have to be added to the ramp to get the mechanical advantage to **5**?



## PREVIEW

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7 A ramp is a form of inclined plane that **decreases work input** to move objects up and forward. Determine the **mechanical advantage** of the ramp below. Then take that **work output divided** by **work input** to find the **efficiency** of the ramp.

- A 50%
- B 80%
- C 100%
- D 200%



- A lever
- B pulley
- C wedge
- D screw



9 The **mechanical advantage** of a screw is calculated by dividing \_\_\_\_\_.

- A the length around the threads by the length of the screw
- B the length of the screw by the number of threads
- C the diameter of the screw by its length
- D the width of the screw by its mass



10 In the picture below, the boy is using his **leg** as a(n) \_\_\_\_\_.

- A wedge
- B axle
- C inclined plane
- D lever





## ANSWER KEY

A wheelbarrow is a type of **lever**.  
What **class** of lever is it?

- A first class
- B second class
- C third class
- D fourth class



(b)

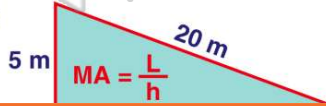
Which combination of actions would **improve** the **efficiency** of a machine?

- A increase work input and decrease work output
- B decrease both work input and work output
- C decrease work input and maintain work output
- D increase work input and work output

(c)

A ramp is a form of inclined plane that **decreases work input** to move objects up and forward. Determine the **mechanical advantage** of the ramp below.

- A 0.25
- B 2
- C 4
- D 5



(c)

If someone is using an inclined plane, it is usually easier to lengthen the ramp than it is to decrease the height. Using the diagram below, **how many meters** would have to be added to the ramp to get the mechanical advantage to **5**?

- A 2 m
- B 3 m
- C 4 m
- D 5 m



(d)



## PREVIEW

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- A 50%
- B 80%
- C 100%
- D 200%



The **mechanical advantage** of a screw is calculated by dividing \_\_\_\_\_.

- A the length around the threads by the length of the screw
- B the length of the screw by the number of threads
- C the diameter of the screw by its length
- D the width of the screw by its mass



(a)

- C wedge
- D screw



In the picture below, the boy is using his **leg** as a(n) \_\_\_\_\_.

- A wedge
- B axle
- C inclined plane
- D lever



(d)