



Name _____ Class _____ Date _____

1 A man is using a machine and applying 400 N of force. If the mechanical advantage of this machine is doubled, how much force would he have to apply?

- A double the original force
- B half the original force
- C the same original force
- D no force at all

3 In the diagram below, a worker is pushing a barrel up a ramp. Another name for this ramp is a(n) _____

- A lever
- B pulley
- C wedge



2 The unit of measurement used to tell how much work has been done is called a joule. What is 1 joule equal to?

- A 1 kg x 1 m
- B 1 m x 1 L
- C 1 N x 1 m
- D 1 N x 1 kg



4 In the picture below, how could the worker increase the mechanical advantage of the ramp?

- A push harder
- B make the ramp longer



5



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7

- B put both hands together
- C shorten the rake
- D put her right hand further down the handle



is 80 joules?

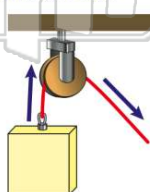
$$\text{efficiency} = \frac{\text{work output} \times 100}{\text{work input}}$$

- A 80 joules
- B 90 joules
- C 100 joules
- D 180 joules

9

If a worker was using the pulley pictured in the diagram below, how much force is he saving to lift the block?

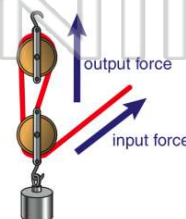
- A half
- B double
- C triple
- D none



10

What is the mechanical advantage of the pulley system shown below?

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





ANSWER KEY

A man is using a machine and applying 400 N of force. If the mechanical **advantage** of this **machine** is **doubled**, how much force would **he have to apply**?

- A** double the original force
- B** half the original force
- C** the same original force
- D** no force at all

(b)

The unit of measurement used to tell how much work has been done is called a **joule**. What is 1 joule equal to?

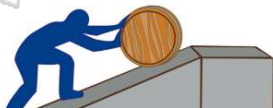
- A** 1 kg x 1 m
- B** 1 m x 1 L
- C** 1 N x 1 m
- D** 1 N x 1 kg



(c)

In the diagram below, a worker is pushing a barrel **up** a **ramp**. Another name for this ramp is a(n) _____.

- A** lever
- B** pulley
- C** wedge
- D** inclined plane



(d)

In the picture below, how could the worker **increase** the **mechanical advantage** of the ramp?

- A** push harder
- B** make the ramp longer
- C** make the ramp higher



(b)



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- D** put her right hand further down the handle

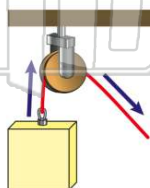


$$\text{efficiency} = \frac{\text{work output}}{\text{work input}}$$

- A** 80 joules
- B** 90 joules
- C** 100 joules
- D** 180 joules

If a worker was using the **pulley** pictured in the diagram below, how much **force** is he saving to lift the block?

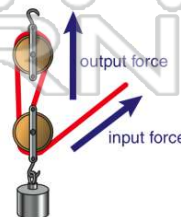
- A** half
- B** double
- C** triple
- D** none



(d)

What is the **mechanical advantage** of the pulley system shown below?

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



(c)