

Mechanical Advantage w/s

True / False

1. _____ MA advantage tells how many times an effort is multiplied
2. _____ making the effort arm longer increases the MA

Use the formulas to solve the following problems:

$$MA = \text{resistance} / \text{effort}$$

$$\text{effort} = \text{resistance} / MA$$

$$MA = \text{length effort arm} / \text{length resistance}$$

3. A hammer is used to pull a nail out of a wall. The resistance is 6 and the effort is 60. Find the MA
 4. What is the effort when the resistance is 777 and the MA is 111?
 5. A screwdriver is used to pry the lid off of a paint can. The length of the resistance arm is 0.5 cm, and the effort arm length is 15 cm. What is the MA of the screwdriver?
 6. An iron bar is used as a lever to lift a slab of sidewalks. The MA of the bar is 6. If the slab weighs 402 N, what is the effort?
 7. What is the effort when the resistance is 555 and the MA is 5?
 8. How much effort is needed to move 300 N with an MA of 5?
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|--|---|---|
| 9. Resistance = 500 m
Effort = 40 m
MA = | 13. resistance = 5 km
MA = 500
effort = | 17. MA =
effort = 90 cm
resistance = 9 |
| 10. Effort arm = 30 cm
MA = 5
Resistance arm = | 14. effort =
resistance = 6 m
MA = 0.6 | 18. effort = 80 mm
MA =
resistance = 14 mm |
| 11. MA = 3
Resistance arm = 12 cm
Effort arm = | 15. resistance arm = 12 m
MA =
effort arm = 144 m | 19. resistance =
effort = 3 m
MA = 4 |
| 12. MA = 12
resistance = 36 mm
effort = | 16. effort arm = 50 m
resistance arm =
MA = 10 | 20. resistance arm = 12 m
MA = 4
effort arm = |