# Simple Machines

Matching

| Column I | Column II |
|---|---|
| _____ 1. bar that is free to pivot about a fixed point | a. wheel and axle |
| _____ 2. an inclined plane with one or two sloping slides | b. inclined plane |
| _____ 3. grooved wheel with a rope running along the groove | c. gear |
| _____ 4. two wheels of different sizes that rotate together | d. lever |
| _____ 5. sloping surface used to raise objects | e. wedge |
| _____ 6. two wheels of different sizes with interlocking teeth along their circumferences | f. pulley |
| _____ 7. inclined plane wrapped in a spiral around a cylindrical post | g. screw |

Drag and drop to classify each as a type of Lever or Inclinded Plane

wheel and axle  inclined plane  gear  lever

wedge  pulley  screw

| 8. Levers | 9. Inclined planes |
|---|---|
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**Directions:** *Calculate the ideal mechanical advantage for each of the following.*

10. A mover uses a ramp to push a stereo into the moving van. The ramp is 3 meters long and 1.5 meters high. What is the ideal mechanical advantage of this ramp?

What is the length of the slope_____  IMA= length of slope ÷ height of ramp.

What is the height of the slope_____  IMA: _____ ÷ _____ = _____

11. A painter uses a fixed pulley to raise a 1-kg can of paint a distance of 10 m.

Look in your notes the IMA of a fixed pully is always _____

12. A screwdriver with a 1-cm shaft and a 4-cm handle is used to tighten a screw.

A screwdrive is a type of _____.

The IMA wheel and axle is the radius of the wheel ÷ the radius of the axle.

What is the radius of the wheel _____.  IMA: _____ ÷ _____ = _____

What is the radius of the axle _____.