

QUIZ / Mechanics - Machines

NAME

DATE

CLASS PERIOD

Put a check ✓ in the ☐ next to the correct answer.

1. A machine is ...

- ☐ An object that transmits or transforms energy
- ☐ A programmable object designed to do work
- ☐ Any complex tool
- ☐ An object that transforms electricity into work
- ☐ Anything acted on by a force

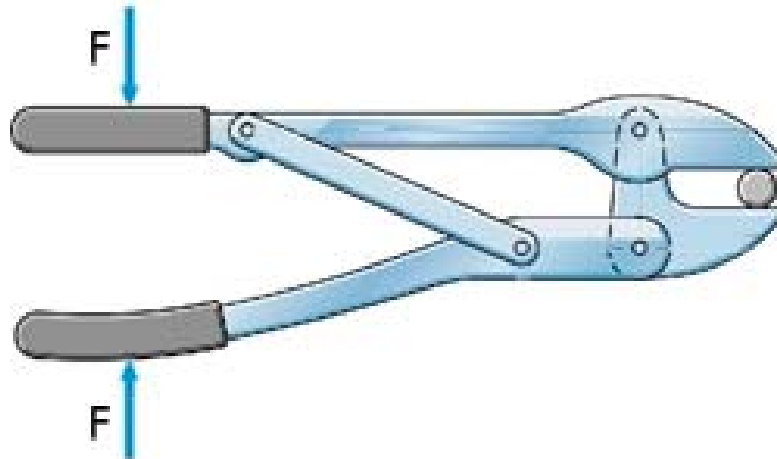
2. Whether simple or complex, a machine can be adequately analyzed by separating it into parts and analyzing each part individually.

- ☐ True
- ☐ False

3. You would consider analyzing a machine for the forces acting on it at what point in the design process?

- ☐ After you have created a design on paper
- ☐ After your prototype has been built
- ☐ When brainstorming solutions
- ☐ During the testing phase
- ☐ In the feedback phase

4. For the given wrench, with applied force F , how many pieces would you expect to need to analyze the reaction forces on the bolt?



- ☐ 4
- ☐ 2
- ☐ 5
- ☐ 3
- ☐ 1

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5. In a machine of two parts, with only forces acting in one plane (i.e., the x-y plane) how many linearly independent equations can you expect to create?

o 6 equations: 2 force and 1 moment equation per part

o 4 equations: 2 force equations per part

o 5 equations: 2 force equations per part, and one moment equation

o There is no way to determine here, I must see the parts

o 8 equations: 2 force and 2 moment equations per part