

Student Name: \_\_\_\_\_

Unit No. **12****Part I.** Place the letter of the key term next to the correct definition.

Term	Definition
	A group creativity technique designed to generate a large number of ideas for the solution to a problem.
	The measurement of frequency at which Inventor Studio produces unique, consecutive images. Abbreviated to fps.
	An object manipulator that uses friction to grab, hold, and manipulate objects and/or performs tasks.
	End of arm tooling (EOAT) that uses a mechanical mechanism and actuator to grasp a part with gripping surfaces (claws).
	A mechanism specifically designed to interact with objects in the robot's (or other vehicle's) environment.
	An object manipulator that applies force to the side of an object to push it.
	The process of producing an image or animation based on user-defined parameters such as fps, lighting style, and scene style.
	A specific type of friction grabber that rolls the object into its claw by use of a powered wheel or roller.
	An object manipulator that uses gravity to lift up an object from underneath.
	Specifies the duration in seconds for each of the actions that comprises an animation. Plays the actions in an animation in sequence, or plays actions specified in this. When opened, activates the last animation.

**A.** Object Manipulator   **B.** Plow   **C.** Gripper   **D.** Timeline  
**E.** Frames Per Second   **F.** Friction Grabber (Gripper)   **G.** Render  
**H.** Brainstorming   **I.** Scoop   **J.** Roller Claw

**Part II.** Fill in the blanks.

There are three categories of object manipulators: plow, scoop, and friction grabber. Most manipulator designs fall into one or more of these categories.

- The \_\_\_\_\_ type of object manipulator does not actually pick up the object; rather, it applies force to the side of the object to push it forward.
- The \_\_\_\_\_ type of manipulator lifts the object up from underneath.
- The \_\_\_\_\_ manipulator grips the object in some way and the friction between the gripper and the object holds the object in place.

A grabber consists of an \_\_\_\_\_ that moves the claws or jaws together and apart. This provides a normal force between the claw and the object. This normal force is essential to the operation of the gripper; without a normal force, there would be no friction force to stop the object from sliding from the gripper jaws.

The most common form of friction grabber manipulator is a \_\_\_\_\_ that pinches the object.

**Part III.** Place the letter of the Inventor technical term next to the correct definition.

Term	Description
	Animates linear or angular values for one or more constraints.
	Sets the current time to zero, which is the start of the animation.
	Plays the animation. Changes to Stop Animation during playback.
	Specifies general settings for rendering animations.

**A.** Go to Start    **B.** Render Animation    **C.** Animate Constraints  
**D.** Play Animation