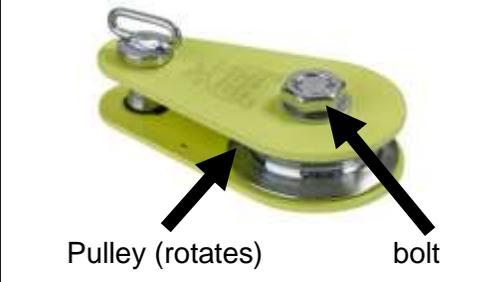
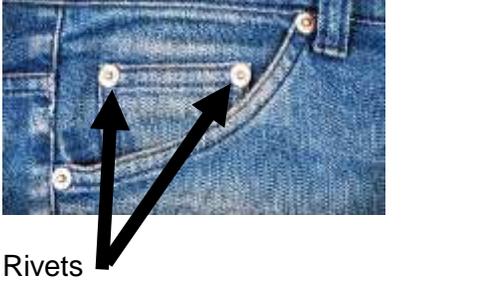


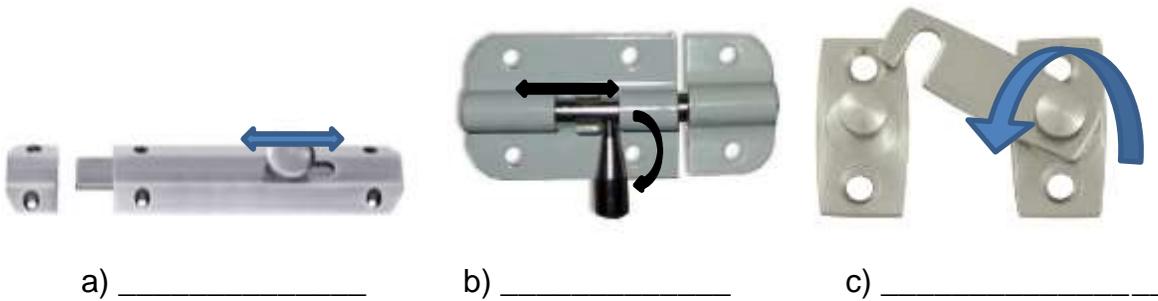
# Ch 13 Mechanical Engineering

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

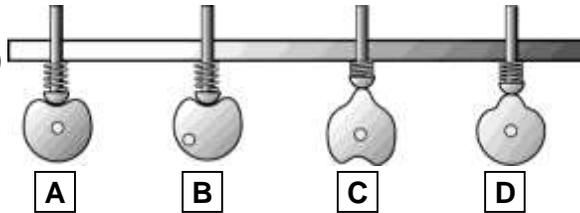
1. Circle or highlight the appropriate link characteristics. (8)

			
Pulley (rotates)		bolt	
<b>Pulley &amp; bracket</b>		<b>Jean pocket &amp; jean</b>	
Direct	Indirect	Direct	Indirect
Rigid	Flexible	Rigid	Flexible
Removable	Non-removable	Removable	Non-removable
Complete	Partial	Complete	Partial

2. Indicate the degree(s) of freedom of:(3)



3. Consider this cam and follower system. (4)



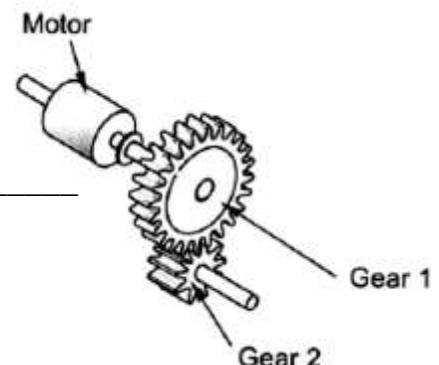
- a) Which system involves an eccentric cam? \_\_\_\_\_
- b) What type of guiding does the spring ensure? \_\_\_\_\_
- c) What degrees of freedom does this system have? \_\_\_\_\_
- d) In which system will the rod rise the highest? \_\_\_\_\_

4. You are attempting to move a very heavy cabinet that is on casters (wheels). How would the following measures change the amount of friction between the cabinet and floor? (4)

	Circle your answer		
Decreasing the mass of the cabinet by removing items.	Increase	Decrease	No effect
Adding another set of wheels.	Increase	Decrease	No effect
Replacing the wheels with soft rubber wheels.	Increase	Decrease	No effect
Cleaning the floor in the room where you are moving it.	Increase	Decrease	No effect

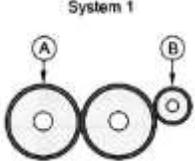
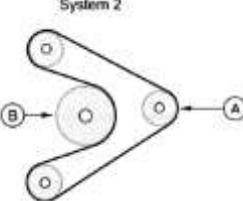
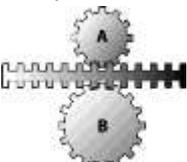
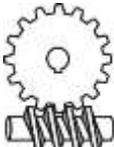
5. Consider the gear assembly in the diagram. (2)

- a) Which gear is the driver? \_\_\_\_\_
- b) Does this gear assembly increase or decrease the speed? \_\_\_\_\_



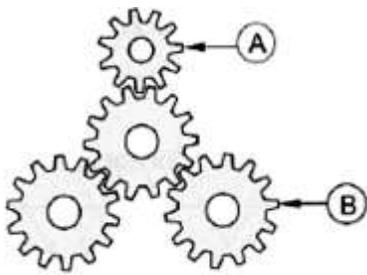


11. Fill-in the table. (6)

Picture	Name the system	Is it reversible? Yes or no.	Motion transmission or transformation?
			
			
			
			

12. If gear A is the driver and is rotating at 70 rpm clockwise. How fast and in which direction is B rotating? (2)

Please show your work!

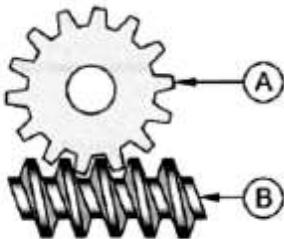


Speed \_\_\_\_\_ rpm

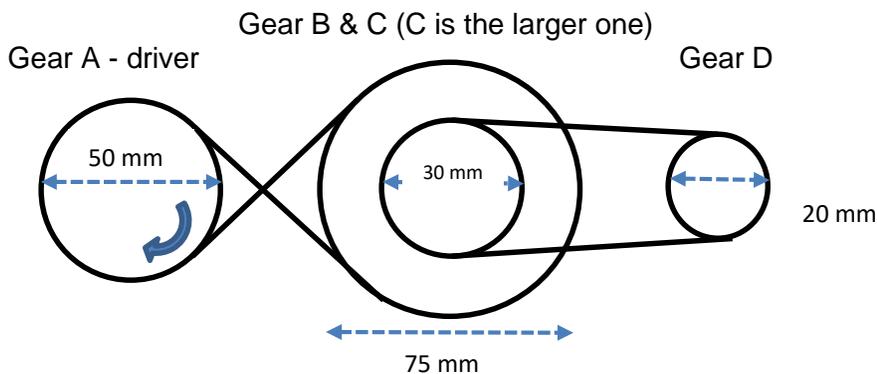
Circle clockwise or counter-clockwise

13. If the worm is rotating at 160 rpm, how fast is the gear rotating? Show your work please. (2)

16 teeth



14. Determine the speed & direction of gears B, C and D. Show your work. (4)



Gear A = 100 rpm & clockwise

Gear B = \_\_\_\_\_ rpm & \_\_\_\_\_

Gear C = \_\_\_\_\_ rpm & \_\_\_\_\_

Gear D = \_\_\_\_\_ rpm & \_\_\_\_\_