

**Exercises: Links**

1. Classify as direct or indirect link.

a) A car tire and wheel

**direct**

b) A highlighter and its cap

**direct**

c) the stems of eyeglasses(over the ears part) and the rest

**indirect(held by a screw)**



2. Which of the above links are flexible?

**None**

3. Which are removable? **all**

4. Classify as complete or partial link.

a) Roller skate's shoe and wheels

**partial link. The wheel can be turned without having the skate move forward if you hold skate in your hand**

**Shopping cart's wheel and bottom frame. partial link. The wheel can be turned without having the cart move forward if you lift the forward part**

b) Chair and desk in the type where they are attached. **complete**

**Exercises: Transformation Systems**

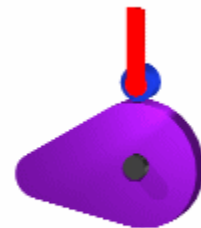
5. Which two systems need to be regularly lubricated?

**Rack & pinion system ; slider-crank system**

6. Give an example of a screw-gear system where the nut can be moved? **plumber's wrench**

7. How do you make sure that the cam and follower remain in contact? **need a spring**

a) What two transformation systems are found in engines? **slider-crank system to eventually spin wheels and a cam-follower to open and shut valves**



8.

b) What other system is found in cars and what does it do?

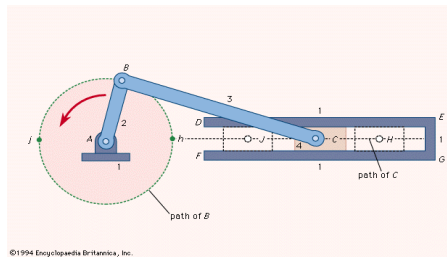
Rack & pinion system used in steering

c) If the cam was a perfect circle, how would the "follower" behave?

It would not go up and down

Would it defeat its purpose? Yes

d) Why doesn't the piston of an engine move from side to side even though the connecting rod moves?



The cylinder's walls hold it in place.