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Explain these two type of friction and give practical example

a. Dry Friction b. Fluid Friction

**Dry Friction:**

This is a force that opposes the relative motion of two solid surface in contact. This is divided into two static friction (“stiction”) between non moving surface and kinetic friction between moving surfaces. Columb’s Law is an approximate model used to calculate the force of dry friction

Ff ≤ UFn Where Ff = Friction Force, U= Coefficient of friction , Fn= normal Force

Applications

* A curling stone sliding along the ice experiences a kinetic force slowing it down
* When applying brakes, the rough edges on the brake pad rub against the bicycle rim and it ends up slowing down the rim
* it used to heat and ignite a matchstick

**Fluid or Wet friction:**

This is the force of friction between a solid surface and a liquid surface also known as wet friction. Fluid friction describes the friction between layers of a viscous fluid that are moving relative to each other. The internal resistance to flow is named Viscosity.

 Applications:

* In the application of transmission system in either generator or cars i.e when oil is used to lubricate the engine for effective movement.

Explain the following type of machines:

1. Wedges b. Square –Threaded Screw c. Journal Bearing

**Wedges:**

A wedge is a triangular shaped tool and is a portable inclined plane; it’s a classical simple machine. It can be used to separate two objects or portions of an object, lift up an object or hold an object in place. It functions by converting a force applied to its blunt end into forces perpendicular to its inclined surfaces. Its advantage lies in its ratio of length of its slope to its width.

**Square Threaded Screw**

The square thread form Is a common screw thread form, used in the high load application such as leadscrew and jack screws. It get its name from the square cross –section of the thread. It as the lowest friction and the most efficient thread form but is difficult to fabricate.

The greatest advantage is that they have a much higher intrinsic efficiency than trapezoidal threads, with a great difficulty in manufacturing this thread.

**Journal bearing:**

This is a cylindrical bushing made of a suitable material machined inside and outside diameter. The Journal is usually the part of a shaft or pins that rotates inside the bearing. Journal bearing is used to support the load on a rotating shaft.