

Emmy Noether

By Lily Seelig

Amalie Emmy Noether



Max Noether



Words That You should Know

Symmetry - the quality of being made up of exactly similar parts facing each other or around an axis.

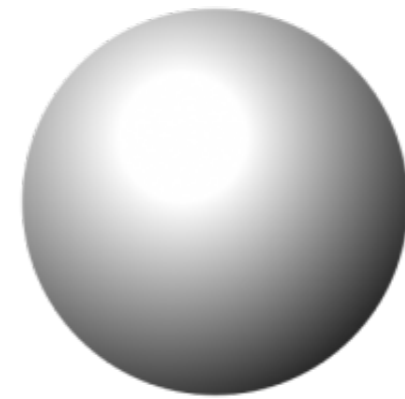
Conservation Laws - states that a particular measurable property of an isolated physical system does not change as the system evolves over time.

Momentum - the quantity of motion of a moving body, measured as a product of its mass and velocity.

Angular Momentum - the quantity of rotation of a body, which is the product of its moment of inertia and its angular velocity.

Noether's Theorem

States that every differentiable symmetry of the action of a physical system has a corresponding conservation law.



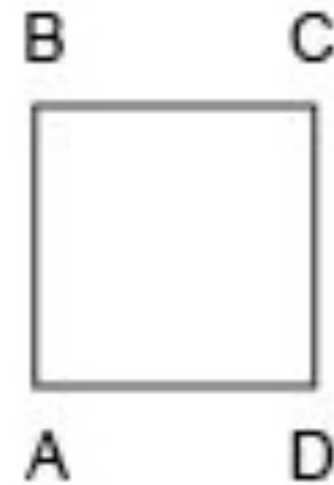
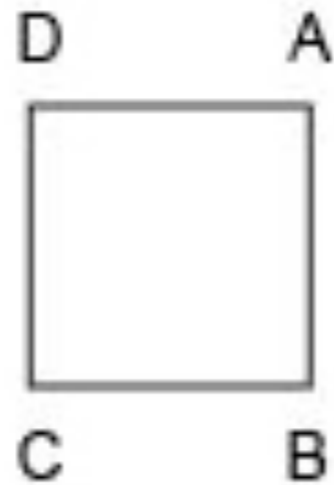
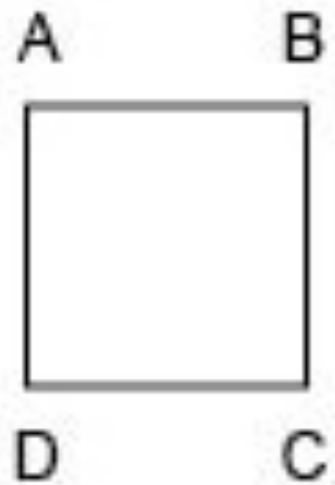
Symmetry

Rotational

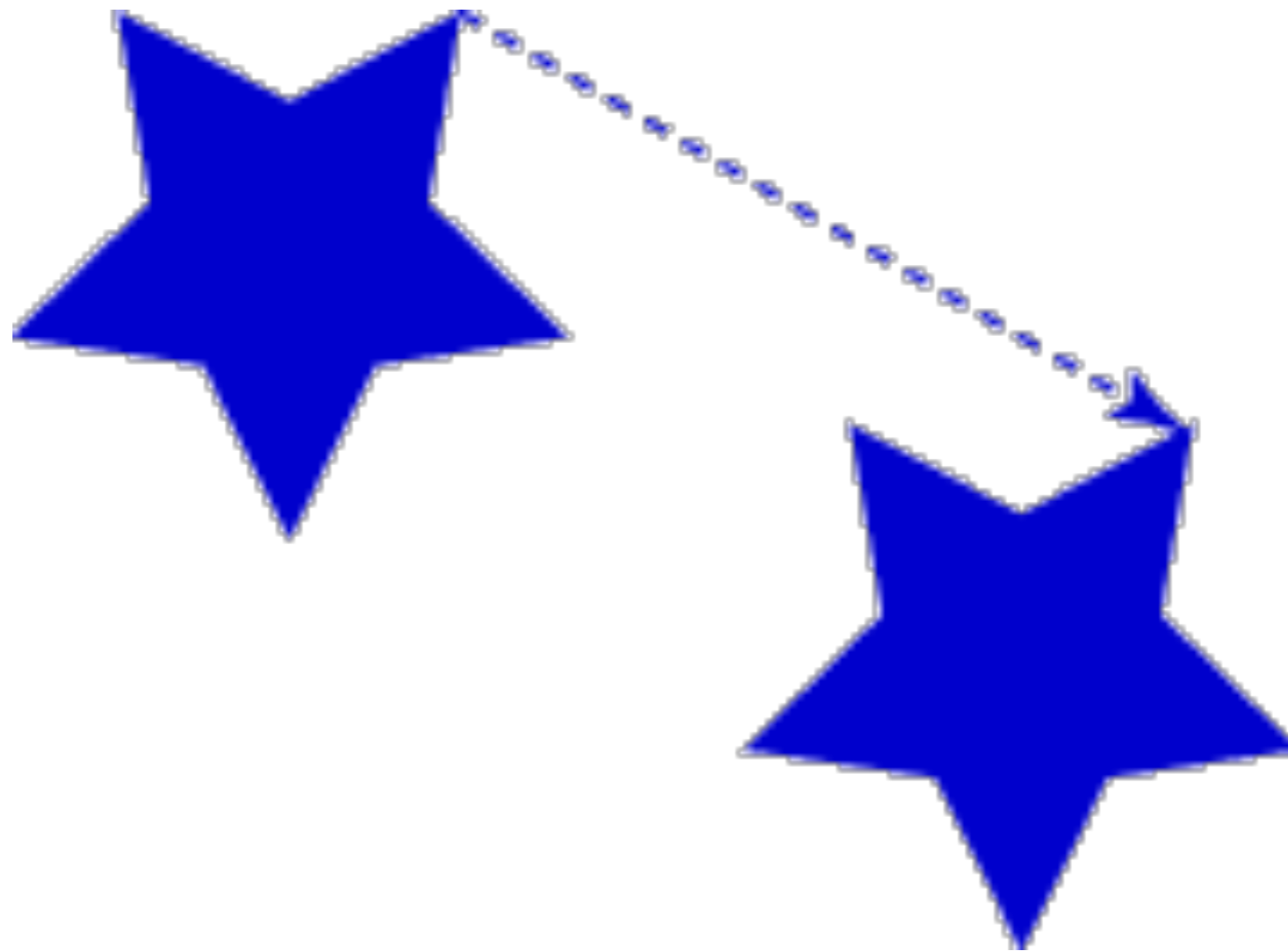
Translational

Time

Rotational Symmetry



Translational Symmetry



Time

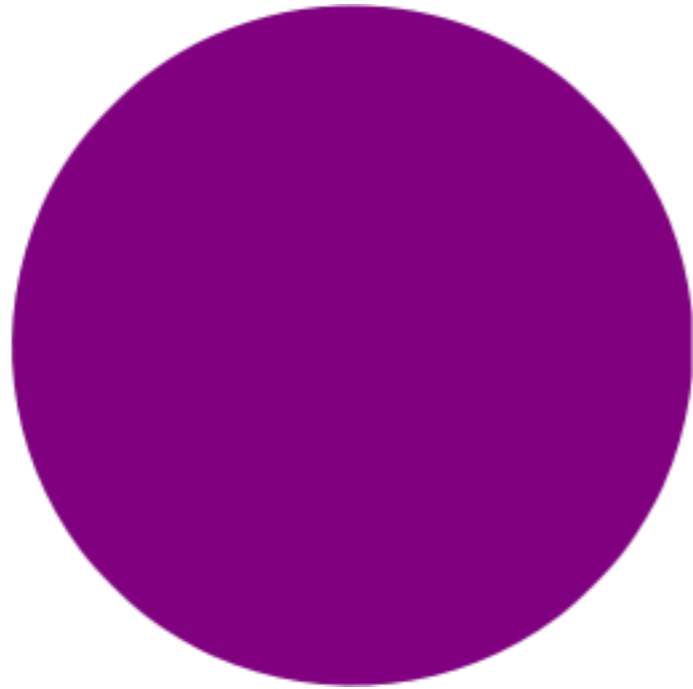
When translating time it has to have the same energy.

Conservation Laws

Total momentum =



= New momentum

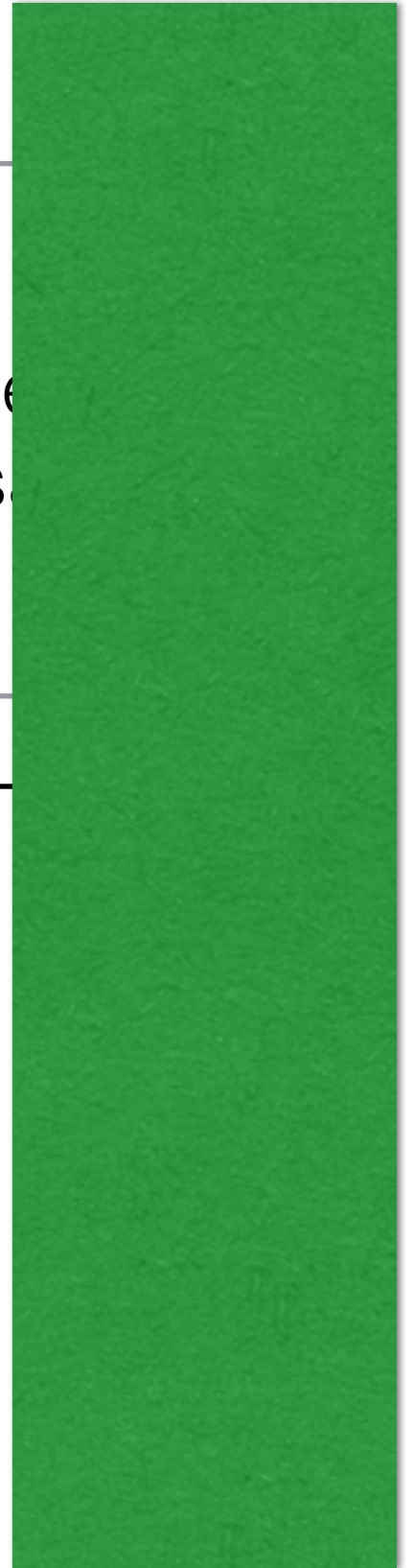
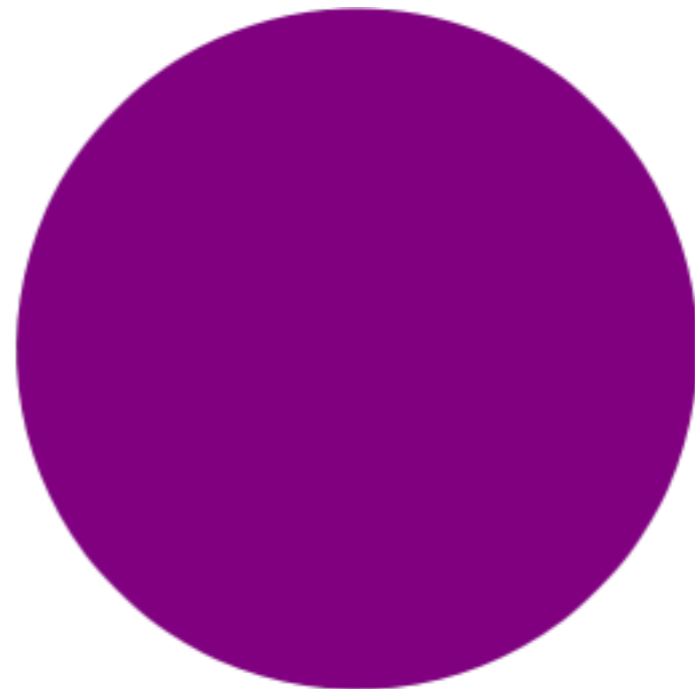
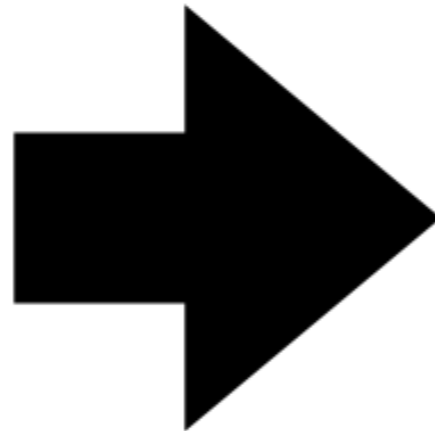


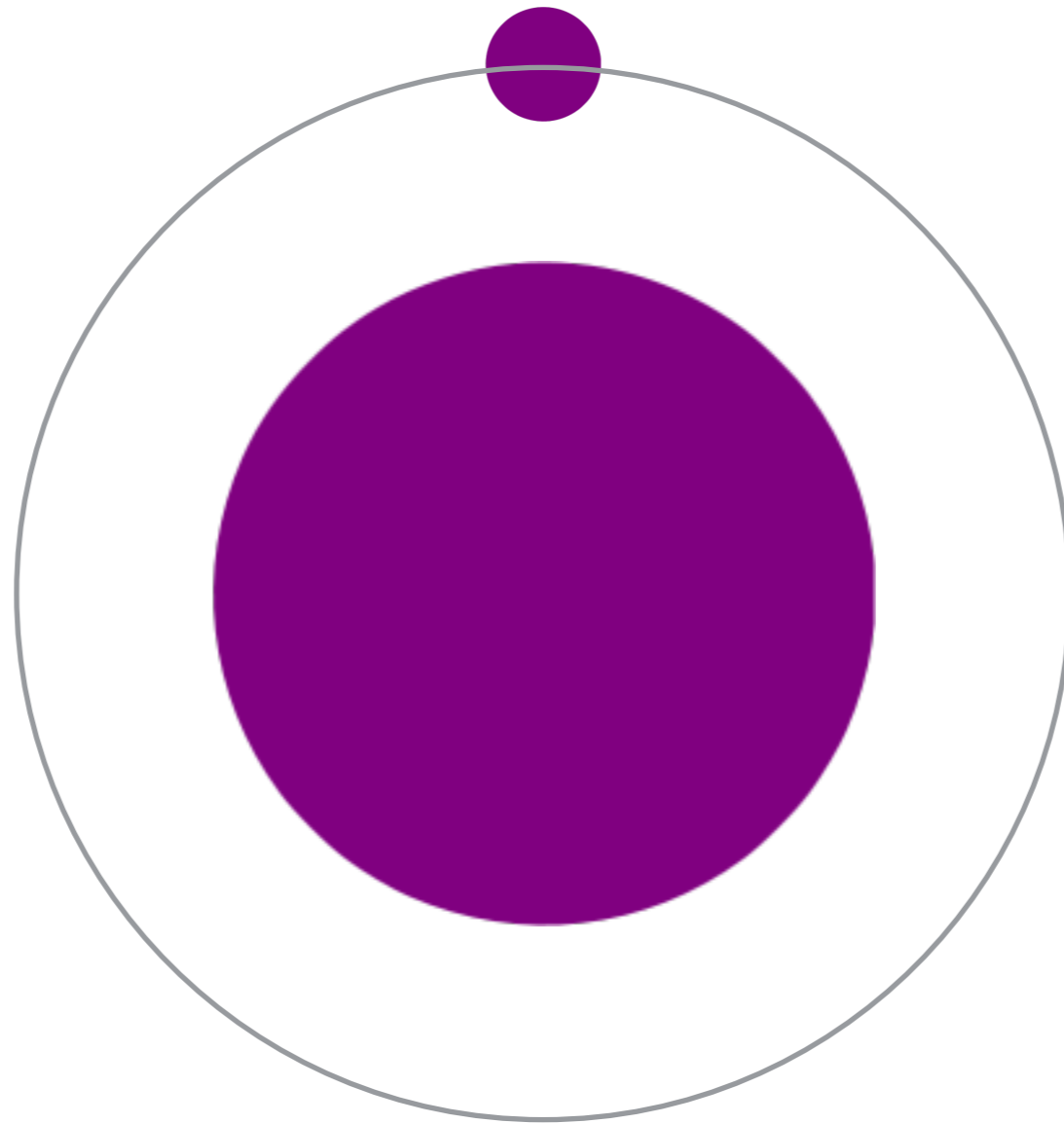
VS.

The ene
the s

**Not
Symmetric**

Less Gravitational
potential energy.





Angular Momentum is constant
(Constant - Conserved)





Symmetry

Conservation

Translational

Momentum

Rotational

Angular
Momentum

Time

Energy

GEBURTSHAUS DER MATHEMATIKERIN

EMMY
NOETHER



GEB. 23.3.1882

EMIGRATION 1933

GEST. 14.4.1935

IN BRYN MAWR USA



https://en.wikipedia.org/wiki/Emmy_Noether

http://phys.columbia.edu/~nicolis/NewFiles/Noether_theorem.pdf

https://en.wikipedia.org/wiki/Noether%27s_theorem

Thank you!!