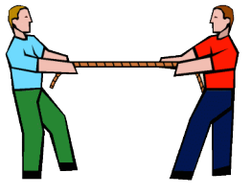
EDEXCEL TOPIC 9 - FORCES AND THEIR EFFECTS



Scalar	***Has a magnitude (size)***	Temperature, speed, mass, time.
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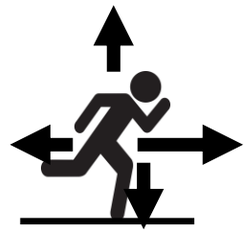
Vectors	***Pairs of arrows are used***	Length or arrow shows magnitude, direction of arrow shows the direction of the force



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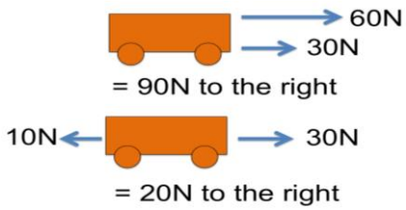

Free body force diagrams	***A diagram showing all the forces acting on an isolated object or a system***	The size and direction of the pairs of forces acting upon an object or system.
Resultant force	***Forces acting along the same line***	Add together the forces acting in the same direction. Subtract the forces acting in opposite directions.
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HIGHER ONLY

Vector diagrams

Equilibrium	Pairs of forces are balanced, the resultant force is zero	On a scale diagram, the tip of the last force drawn should end where the tail of the first force was drawn

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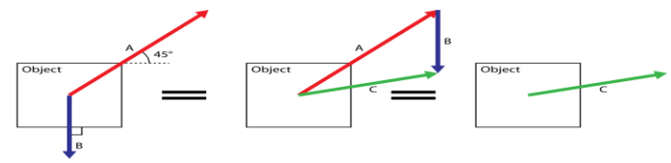

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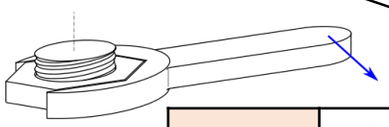
The sum of clockwise moments = The sum of anti-clockwise moments .



Principle of moments	***Rotational forces are in equilibrium***	

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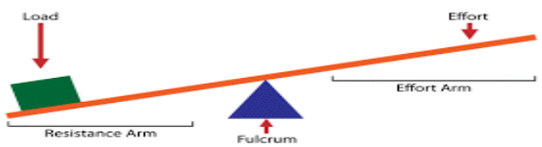
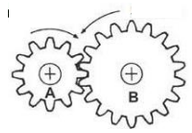


Rotational forces

PHYSICS HIGHER ONLY

Lubrication	***Using a liquid to reduce friction between moving parts***	Reduces unwanted thermal energy transfer.

Gears	***Two interlocking round circles with 'teeth'***	Gear A moves and affects gear B by interlocking the teeth and passing on the rotation motion.



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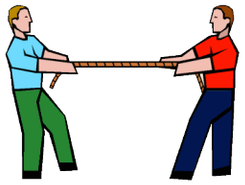

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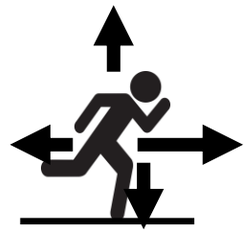

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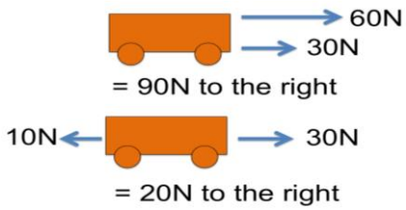

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HIGHER ONLY

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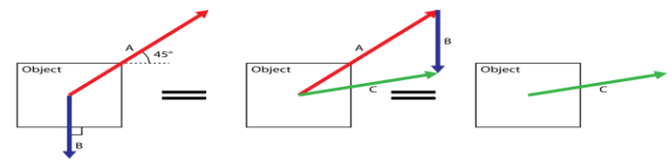

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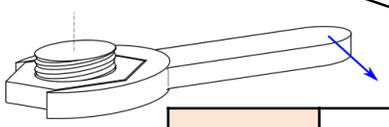

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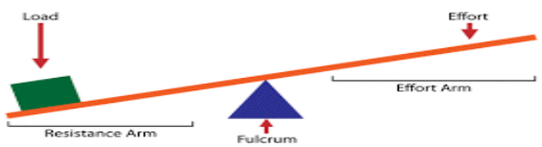

Rotational forces

PHYSICS HIGHER ONLY

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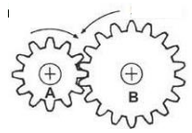

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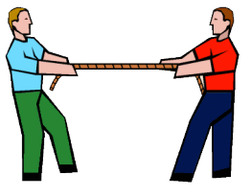

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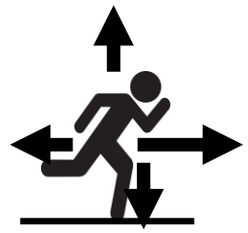

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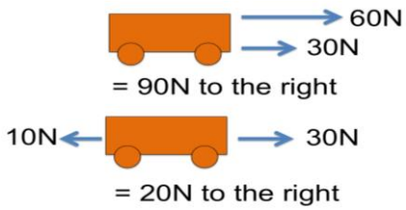

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HIGHER ONLY

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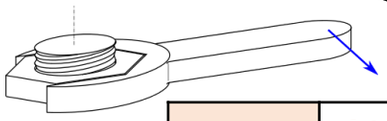

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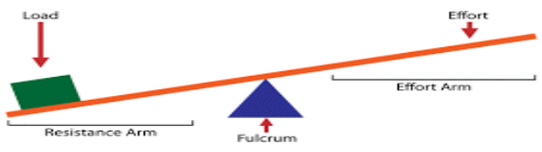

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PHYSICS HIGHER ONLY

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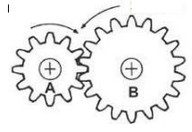

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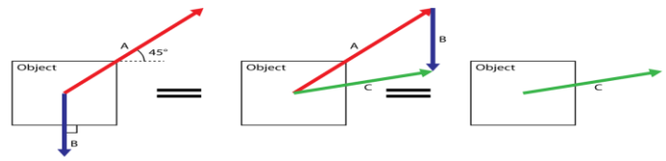

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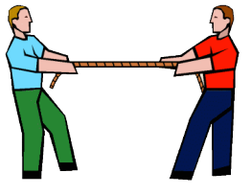

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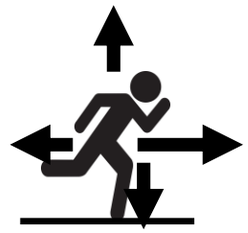

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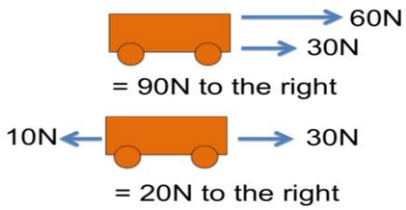

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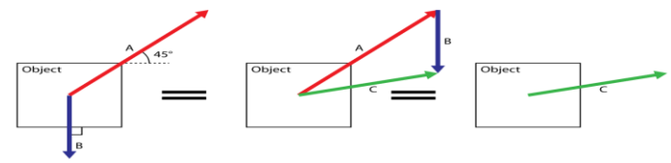

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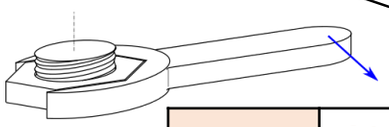

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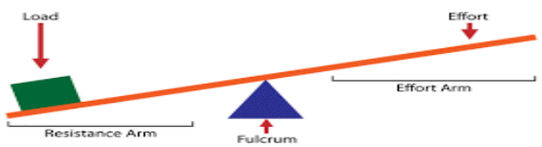

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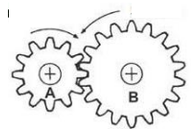

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