- Vectors have magnitude and direction

- Symbols: $\overrightarrow{\mathrm{A}}, \overrightarrow{\mathrm{B}}$

Without arrow, just magnitude
or size. $A=|A|$

$$
\overrightarrow{\mathrm{C}}=\overrightarrow{\mathrm{A}}+\overrightarrow{\mathrm{B}}
$$



OHQ1
OHQ2

## Multiplication by a scalar

$$
\begin{aligned}
& \overrightarrow{\mathrm{F}}=3 \overrightarrow{\mathrm{~A}} \\
& \overrightarrow{\mathrm{~F}}=\overrightarrow{\mathrm{A}}+\overrightarrow{\mathrm{A}}+\overrightarrow{\mathrm{A}}
\end{aligned}
$$



## Subtraction $\vec{C}=\vec{A}-\vec{B}$



## Negative Vectors

The negative of a vector has the same size but points in the opposite direction.


Note $\vec{A}+(-\vec{A})=0$

## General method

- Pick any start and end points
- Following an arrow in same direction is +
- Follow in opposite direction is -


