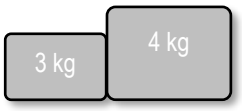
CONCEPT: INTRO TO VECTOR MATH

● Adding/subtracting scalars is easy**.** But vectors have *direction*, so math with vectors is sometimes not as straightforward**.**

- Because vectors have direction, they're drawn as _____**.**

COMBINING SCALARS

"You combine a 3kg & 4kg box"



Total Mass**:** 3kg + 4kg = _____

● Simple Addition

COMBINING PARALLEL VECTORS

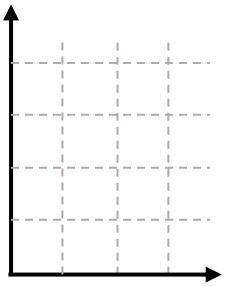
"You walk 3m right, then 4m right"

Total Displacement**:** _____

● Add just like normal numbers

COMBINING PERPENDICULAR VECTORS

"You walk 3m right, then 4m up"



Total Displacement**:** _____

● Forms _____**.**

- just **TRIANGLE MATH**

EXAMPLE**:** For each of the following situations, draw your displacement vectors and calculate the total displacement**:**

(a) You walk 10m to the right, and then 6m to the left

(b) You walk 6m to the right, and then 8m down

PRACTICE: Two perpendicular forces act on a box, one pushing to the right and one pushing up. An instrument tells you the magnitude of the total force is 13N. You measure the force pushing to the right is 12N. Calculate the force pushing up.