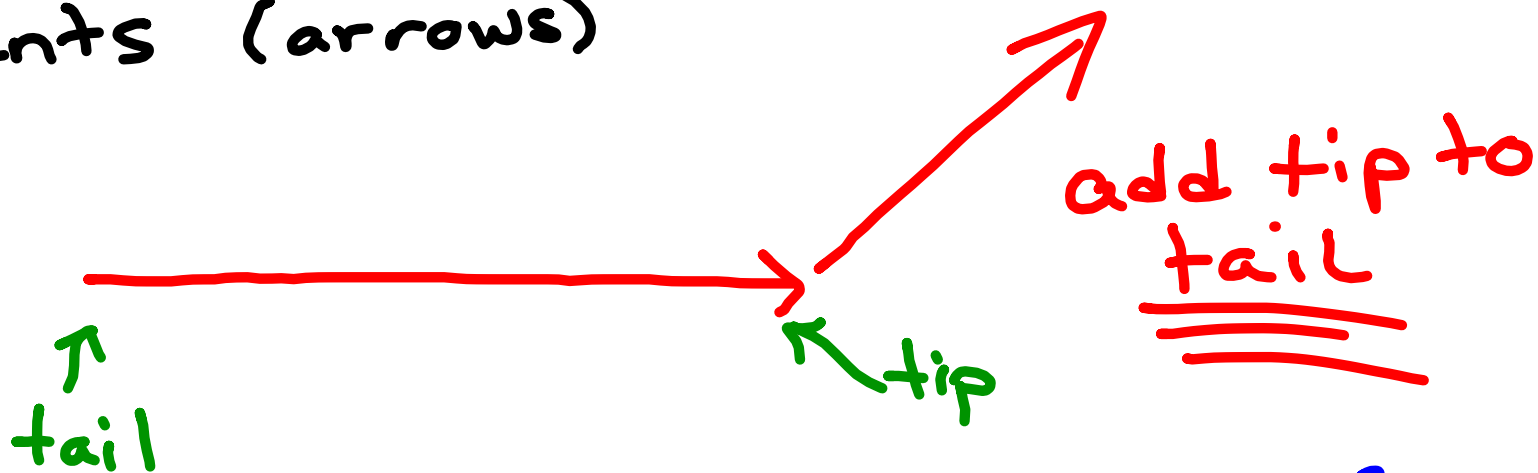


Vectors

A vector is used to represent a quantity that has both a magnitude and a direction.

Vectors are represented by directed line segments (arrows)

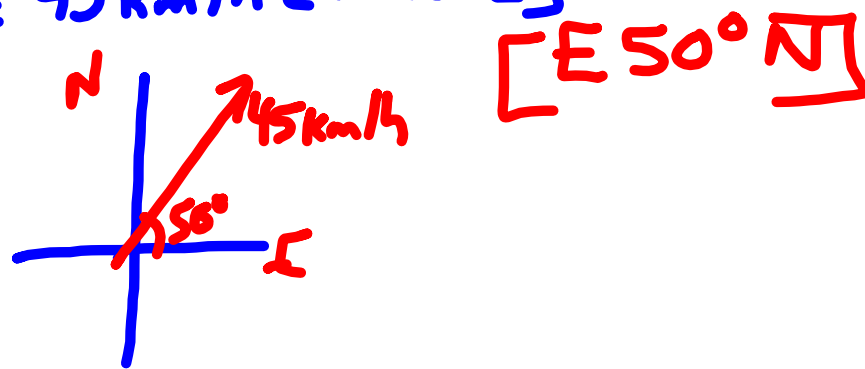
i.e.



i.e. $\vec{d} = 38 \text{ km [W]}$



i.e. $\vec{v} = 45 \text{ km/h [N } 40^\circ \text{ E]}$

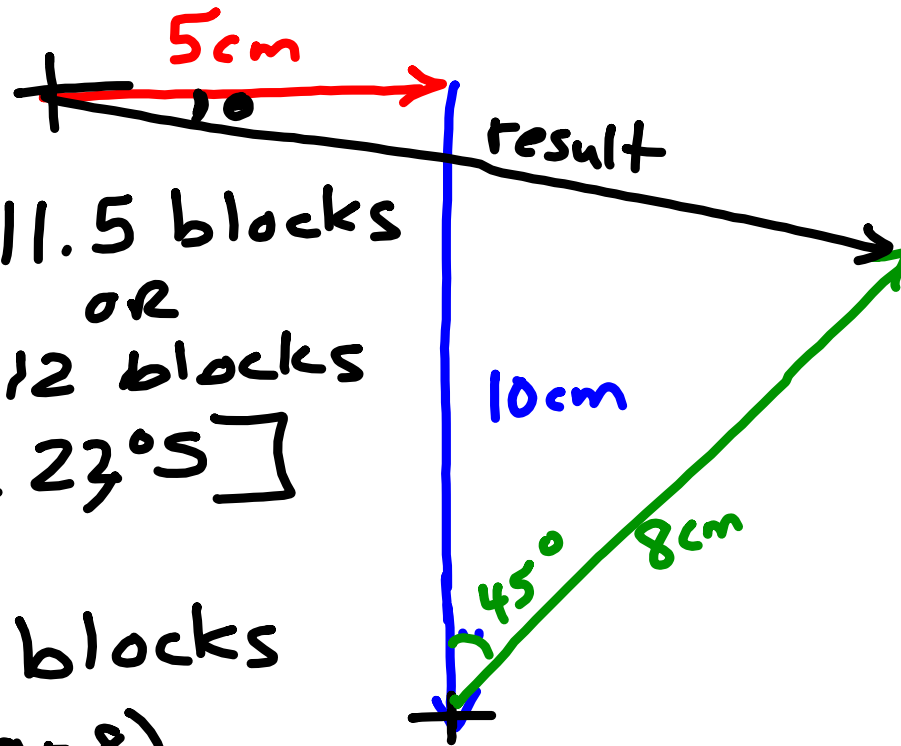


Adding Vectors Always add vectors "tip to tail".

The resultant vector runs from the tail of the first vector to the tip of the last vector.

Ex ~~Desiree~~ ^{Talia} walks 5 blocks [E] then 10 blocks [S] and 8 blocks [NE]. Find her final displacement using a scaled diagram.

Scale 1cm = 1 block



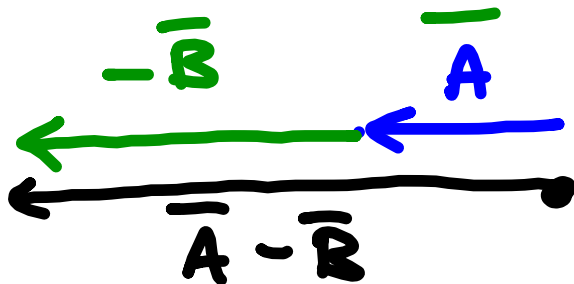
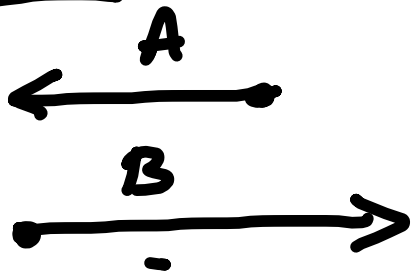
$\Delta d = 11.5$ blocks
or
12 blocks
[E 23°S]

$d = 23$ blocks
(5 + 10 + 8)

Subtracting Vectors

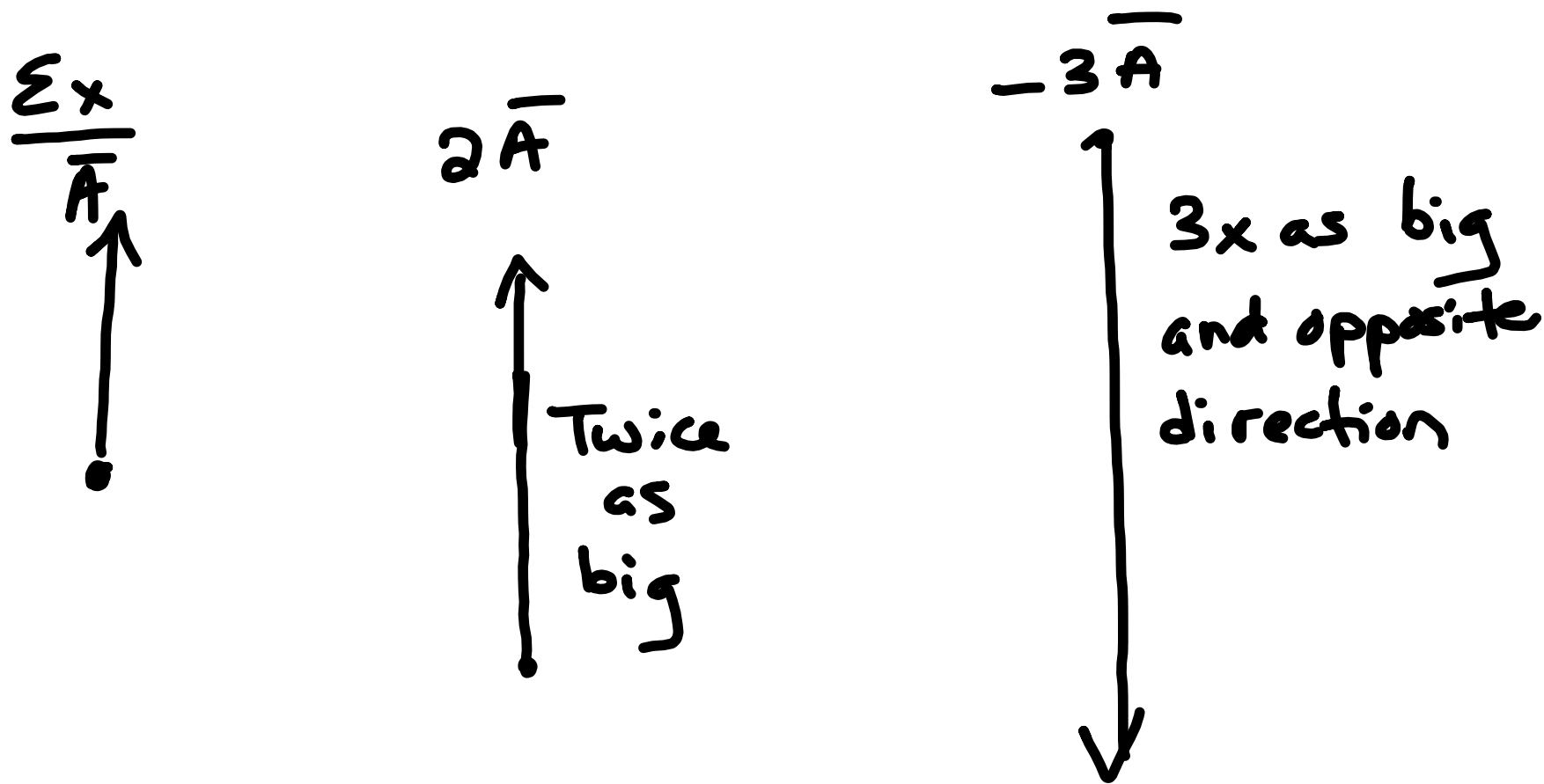
multiply the vector being subtracted by -1
and add. Recall $-8 [w] = 8 [e]$

Ex Subtract \vec{B} from \vec{A}
 $\vec{A} - \vec{B} = \vec{A} + (-\vec{B})$



Multiplication of a Vector by a Scalar

Simply multiply the magnitude.
The direction does not change unless the scalar is a negative number.



* Pg 82 # 2 (scale diagram only)
(for submission)

Pg 111-112 # 12c, 13b (for homework)

Pg 114 # 35, 36, 37
39, 40