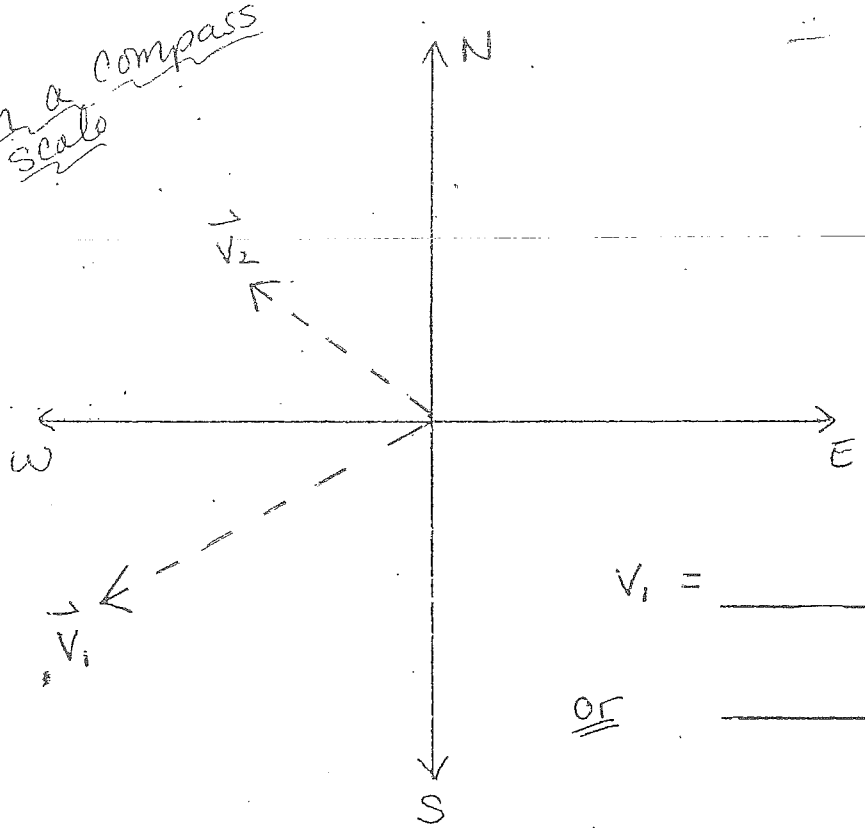
The Language of Vectors: (lesson)

Expressing Magnitudes and Directions

on a compass
on a scale



Scale: 1.0cm : 3.0m/s

V_1 = _____ m/s [ ]

or _____ m/s [ ]

V_2 = _____ m/s [ ]

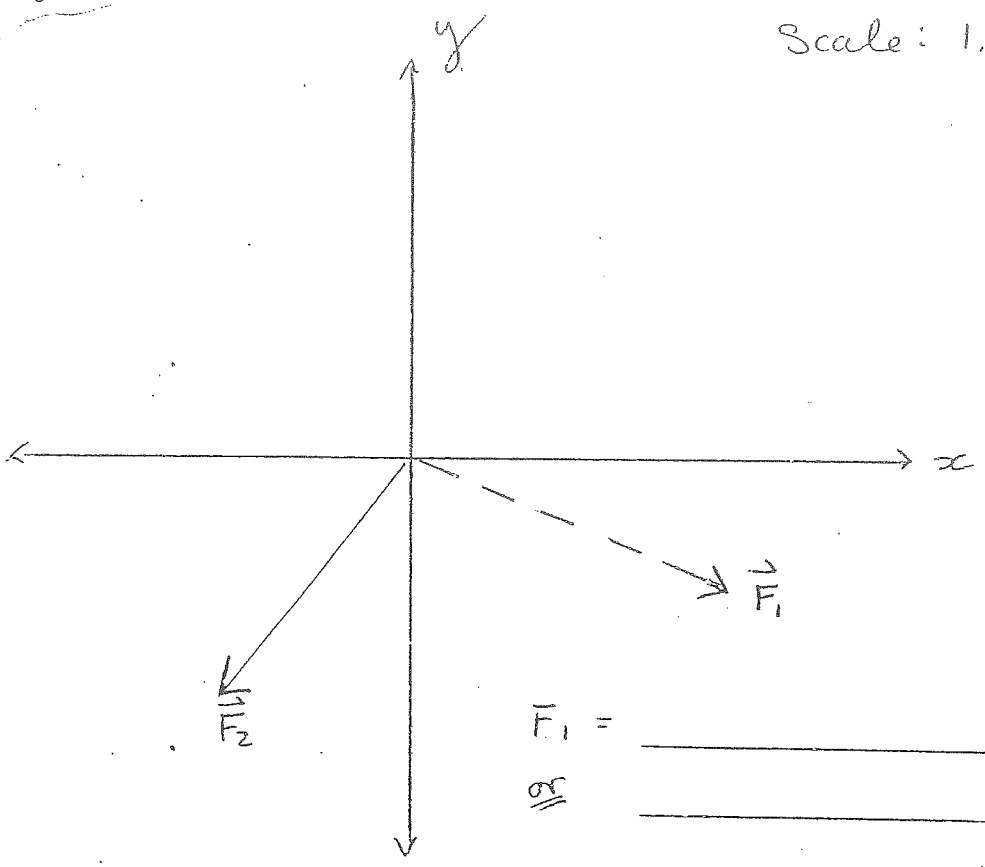
or _____ m/s [ ]

$\vec{V}_1 + \vec{V}_2 = ?$

$\vec{V}_1 - \vec{V}_2 = ?$

on an x-y axis

Scale: 1.0cm : 2.0N



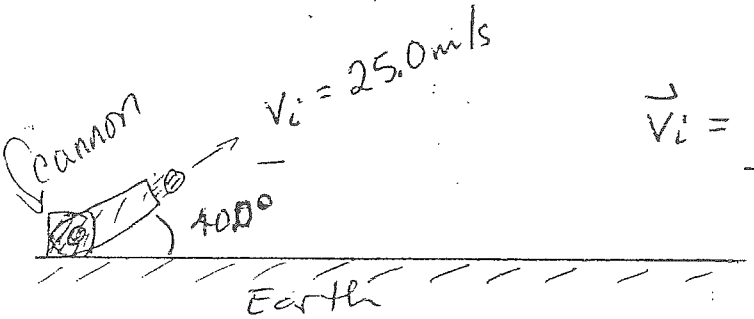
$\vec{F}_1$ = _____

or _____

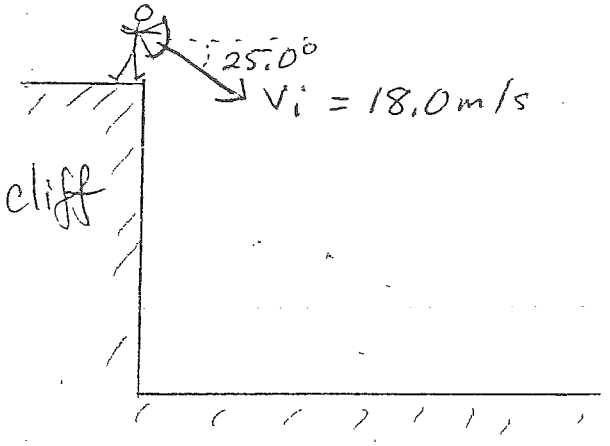
$\vec{F}_2$ = _____

or _____

on the ground, launching into air



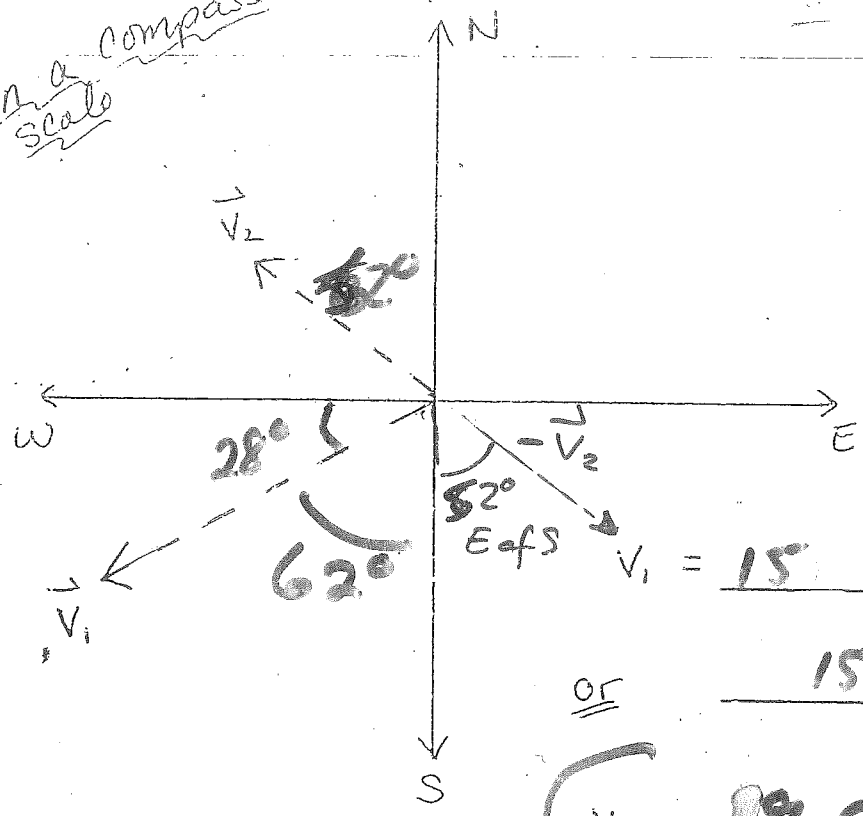
$\vec{V}_i$ = _____



$\vec{V}_i$ = _____

The Language of Vectors:
Expressing Magnitudes and Directions

on a compass
on a scale



Scale: 1.0cm : 3.0m/s

$\vec{V}_1$ = 15 m/s [28° S of W]

or 15 m/s [62° W of S]

$\vec{V}_2$ = 9.0 m/s [52° W of N]

or 9.0 m/s [38° N of W]

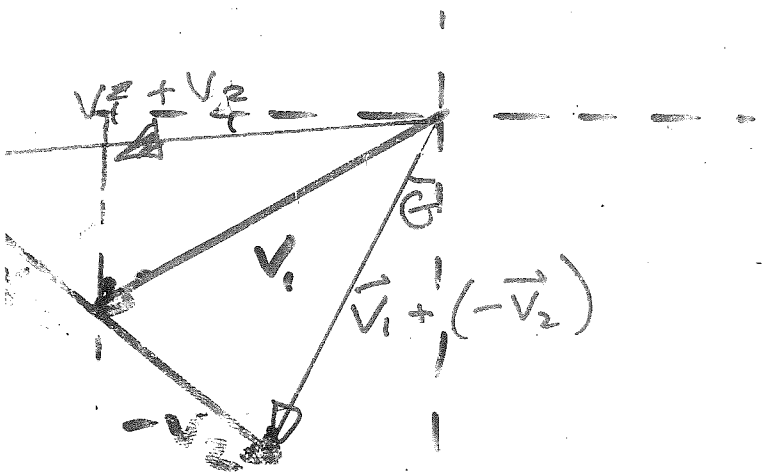
$\vec{V}_1 + \vec{V}_2 = ?$

= 21 m/s [5° S of W]

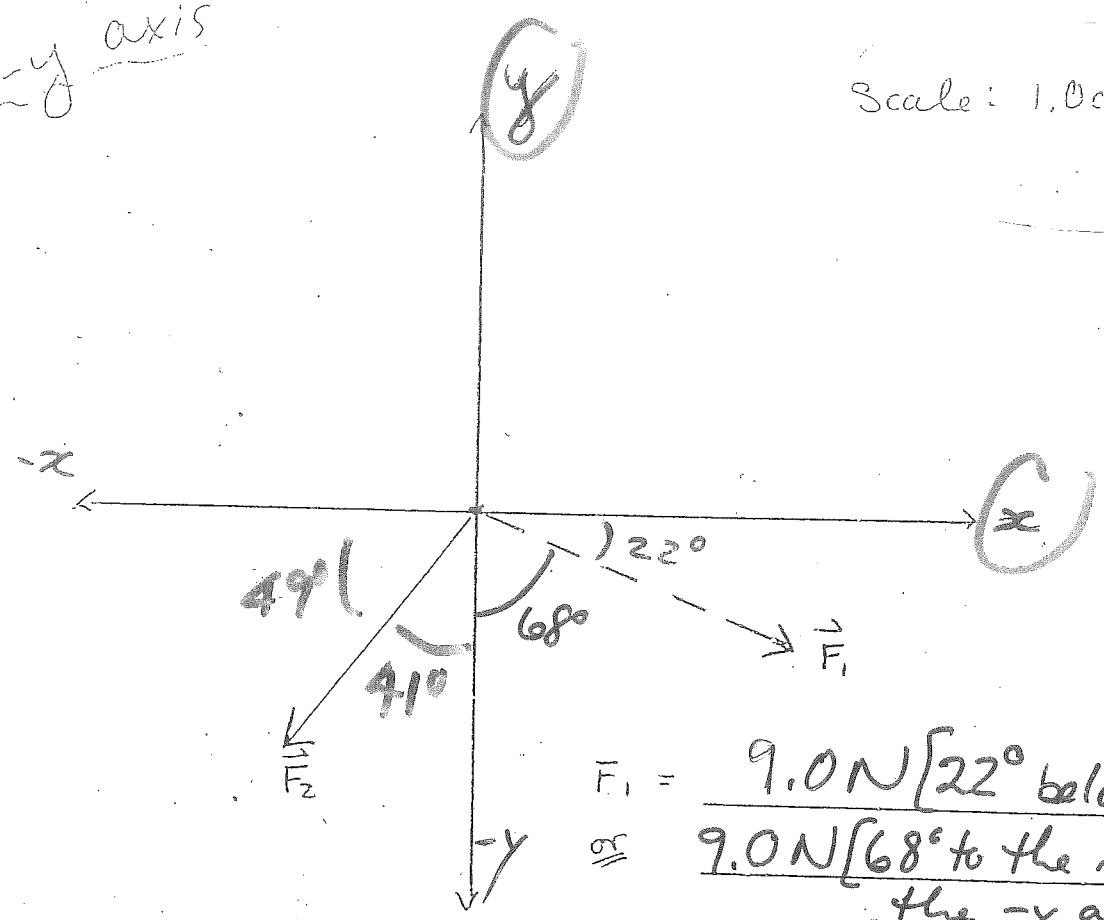
$\vec{V}_1 - \vec{V}_2 = ?$

$\vec{V}_1 + (-\vec{V}_2)$:

= 15 m/s [27° W of S]



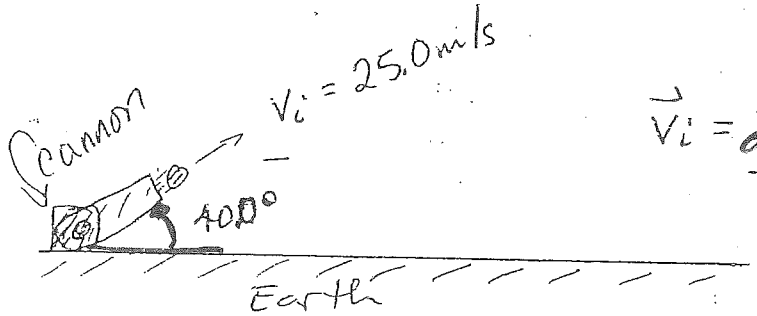
on an x-y axis



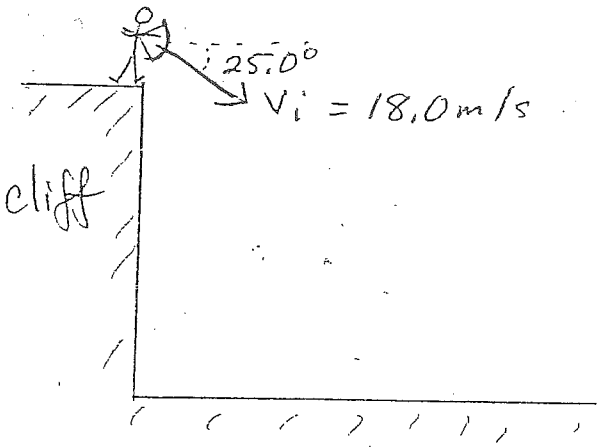
$\vec{F}_1$ = 9.0N [22° below the +x axis]
or 9.0N [68° to the right of the -y axis]

$\vec{F}_2$ = 8.0N [41° to the left of -y axis]
or 8.0N [49° below the -x axis]

on the ground, launching into air



$\vec{v}_i$ = 25.0m/s [40.0° above the horizontal]



$\vec{v}_i$ = 18.0m/s [25.0° below the horizontal]