

## Work

1. $A+C$
2. $2 \mathrm{G}-\mathrm{H}$
$2(3 \mathbf{i}-3 \mathbf{j})-(-2 \mathbf{j})=6 \mathbf{i}-4 \mathbf{j}$
3. $B+D$
4. $F+G$
5. $\mathrm{I}+2 \mathrm{H}$
6. $E+D+3 C$
7. $I+D$
8. $\mathrm{B}-\mathrm{G}$
9. $C-F+D$
10. $2 \mathrm{C}-\mathrm{D}+\mathrm{H}$
11. $H-H+A$
12. $I+2 D-2 C$

## Magnitude

$V\left(4^{2}+7^{2}\right)=8.1$
$\sqrt{ }\left(6^{2}+-4^{2}\right)=7.2$

## Direction

$\tan ^{-1}(7 / 4)=60.3^{\circ}$ north of east
$\tan ^{-1}(4 / 6)=33.7^{\circ}$ south of east

Add the vectors geometrically. Label the direction (angle) of the resultant vector.

1. $\mathrm{A}+\mathrm{C}$

2. $B+D$

3. $2 \mathrm{G}-\mathrm{H}$
notice the directional angle is not inside the triangle made of the vectors; it could be but doesn't need to be

4. $\mathrm{F}+\mathrm{G}$

5. $\mathrm{I}+2 \mathrm{H}$

6. $I+D$

7. $E+D+3 C$

8. B-G

