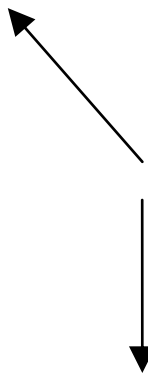
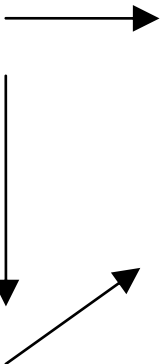
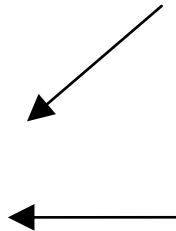
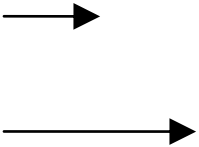
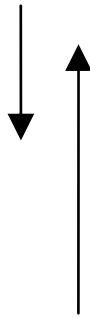
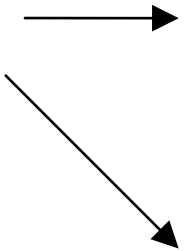
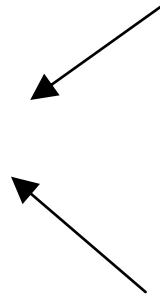
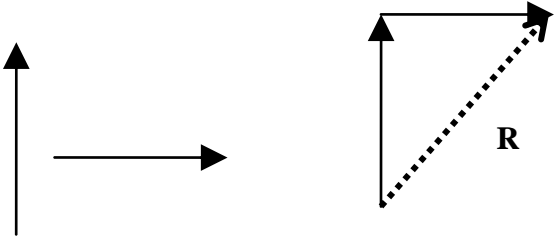


### Vector Addition Worksheet |

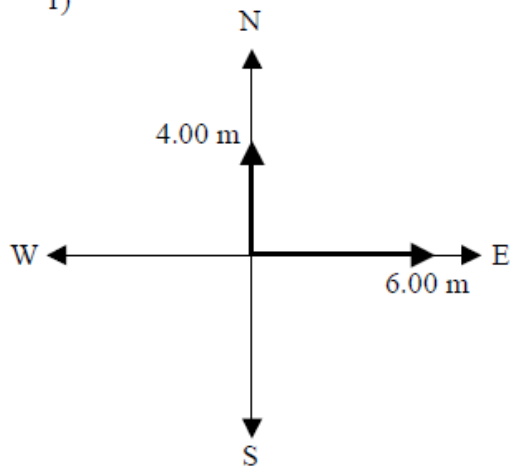
**Directions:** Graphically add each pair of vectors shown below in its box, making sure to show the vector addition as well as the resultant with a dotted line and arrowhead. If there is no resultant, **write "no R"**.

Example:

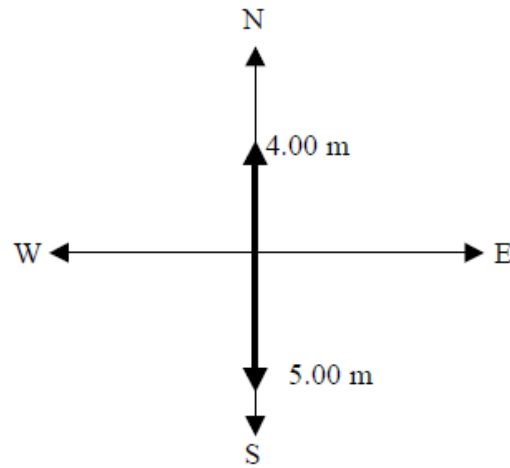


Vectors Practice: Sketch, then calculate the magnitude and direction of the resultant for each of the following pairs of vectors.

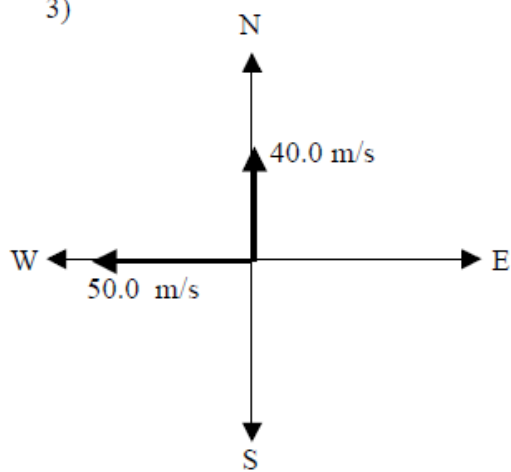
1)



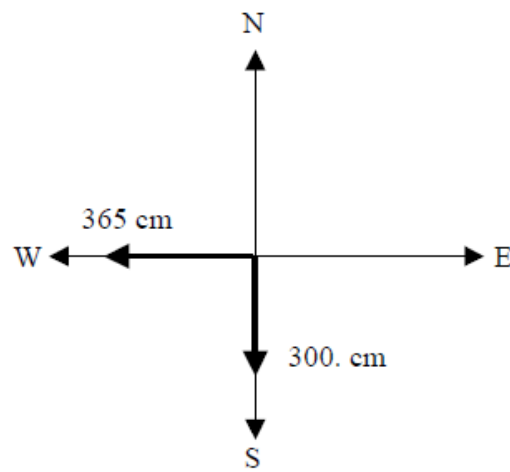
2)



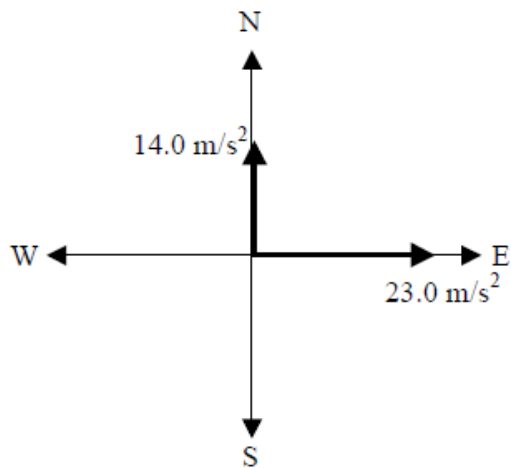
3)



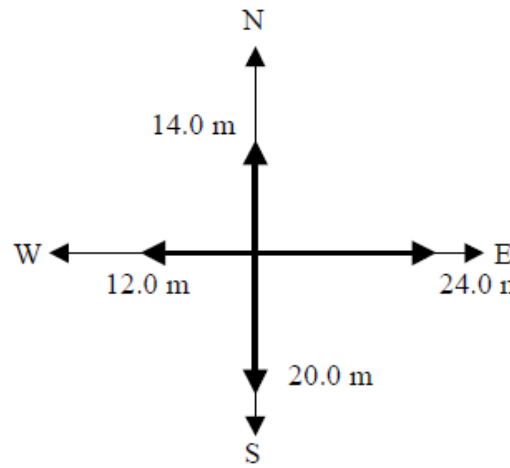
4)



5)

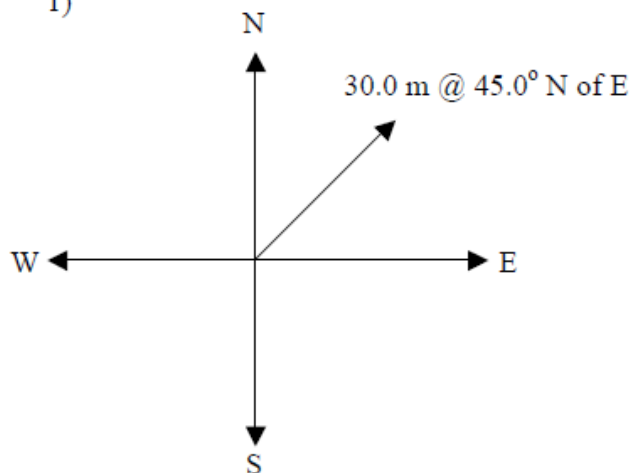


6)

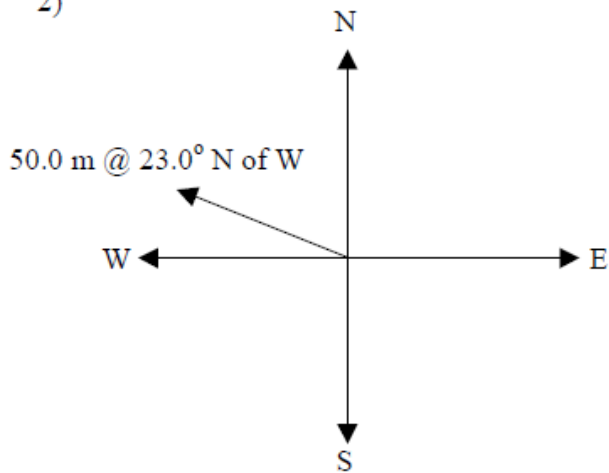


Vectors Practice: Sketch, then calculate the components of the following vectors.

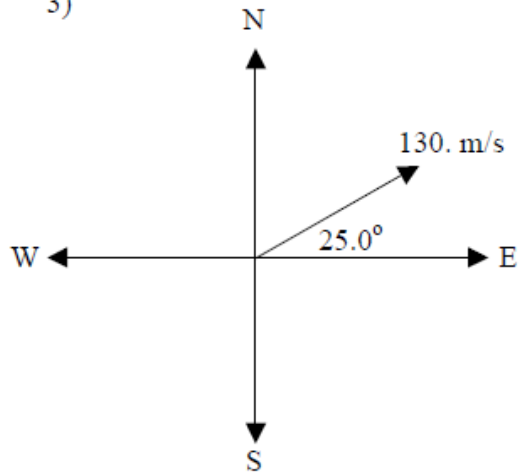
1)



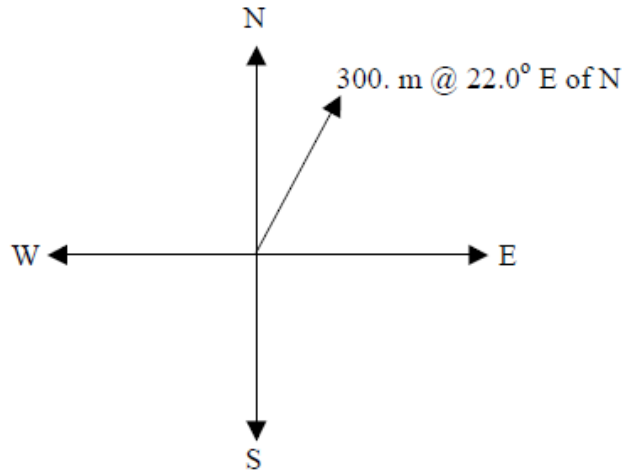
2)



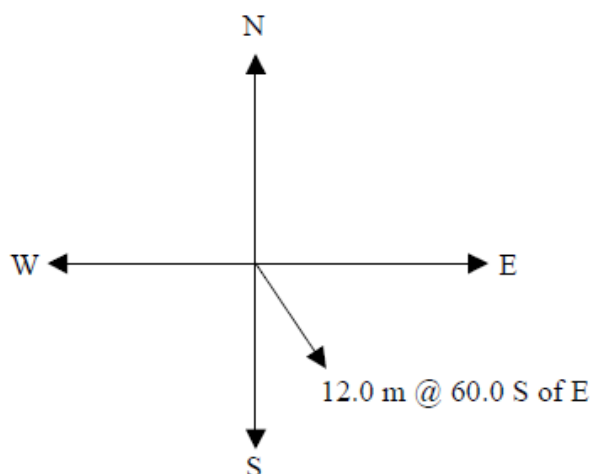
3)



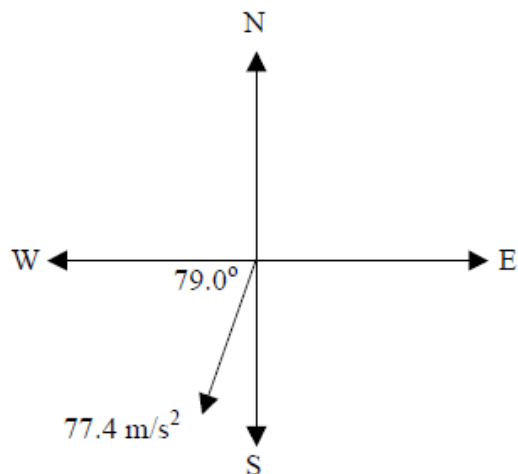
4)



5)



6)



## Vector Practice: Answers

### Resultants:

- 1) 7.21 m @ 33.7° N of E or 56.3° E of N
- 2) 1 m @ S
- 3) 64.0 m/s @ 38.7° N of W or 51.3° W of N
- 4) 472 cm @ 39.4° S of W or 50.6° W of S
- 5) 26.9 m/s @ 31.3° N of E or 58.7° E of N
- 6) 13.4 m @ 26.6° S of E or 63.4° E of S

### Components:

- 1)  $r_N = 21.2$  m       $r_E = 21.2$  m
- 2)  $r_N = 19.5$  m       $r_W = 46.0$  m
- 3)  $v_N = 54.9$  m/s       $v_E = 118$  m/s
- 4)  $r_N = 278$  m       $r_E = 112$  m
- 5)  $r_S = 10.4$        $r_E = 6$
- 6)  $a_W = 14.8$  m/s<sup>2</sup>       $a_S = 76.0$  m/s<sup>2</sup>