

PART A. ON THE FLOOR (LAB)

(Use a meter stick, protractor, string, masking tape and/or chalk.)

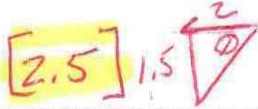
Find each vector sum by actual measurement on the floor.

1. 3 feet [N] + 2 feet [W] =

3.61 FEET @ 56° N y W



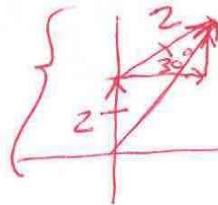
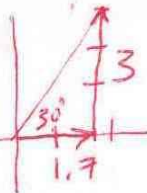
2. 1.5 feet [S] + 2 feet [W] =



$\phi = \tan^{-1} \frac{1.5}{2} = 37^\circ$ S y W

3. 2 feet [30° N of E] + 2 feet [N] =

3.45 @ 60° N y E



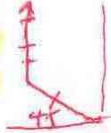
$\Sigma x = 1.7$

$\Sigma y = 2 + 1$

$\phi = \tan^{-1} \left(\frac{3}{1.7} \right) = 60$

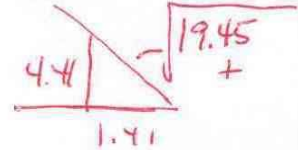
4. 2 feet [45° N of W] + 3 feet [N] =

4.63 @ 72° N y W



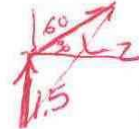
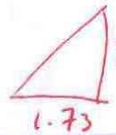
$\Sigma x = -1.41$

$\Sigma y = 3 + 1.41$



5. 1.5 feet [N] + 2 feet [60° E of N] =

3.04 @ 55° N y E



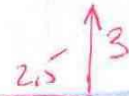
$\Sigma y = 1.5 + 1$

$\Sigma x = 1.73$

6. Figure out an easy way to do this one (& do it):

1 feet [N] + 0.5 feet [E] + 1.5 feet [N] + 1 feet [E] + 0.5 feet [N] + 1 feet [E] =

3.9 FT @ 50° N y E



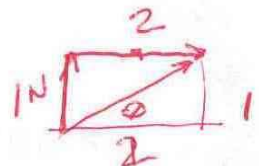
7. Same for this one:

8 feet [N] + 15 feet [E] + 2 feet [N] + 17 feet [W] + 9 feet [S] + 4 feet [E] =

10N + 9E + 19E + 17W

1N 27° 2E

2.24 @ 63° N y E



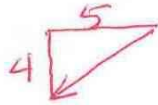
Part B. ON PAPER.

Use a ruler, protractor, & pen/pencil. Do as many as you can in class.

8. 4 cm [N] + 3 cm [E] =

5 cm @ 53° N of E

9. 5 cm [W] + 4 cm [S] =



6.4 @ 38.7° S of W

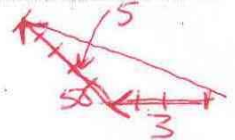
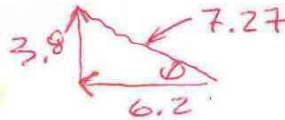
10. 3 cm [20° E of N] + 4 cm [E] =

5.8 cm @ 29° N of E

11. (B-question) 3 cm [W] + 5 cm [40° W of N] =

$\Sigma x = 3 + 3.2 = 6.2$
 $\Sigma y = 3.8$

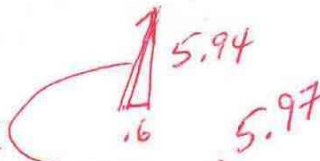
7.27 @ 31.5° N of W



12. (B-question) 6 cm [35° N of E] + 5 cm [60° W of N] =

$\Sigma x = -4.3 + 4.9 = 0.6$
 $\Sigma y = 2.5 + 3.4$

5.97 @ 84° N of E

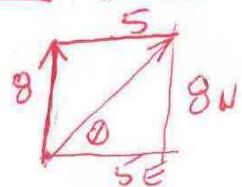


13. 3 cm [N] + 5 cm [S] + 2 cm [E] + 7 cm [W] + 10 cm [N] + 10 cm [E] =

13N + 5S + 12E + 7W

8N + 5E

9.4 @ 58° N of E



14. (B-question) 8 cm [S] + 5 cm [30° E of N] + 3 cm [E] =

6.6 cm @ 34° S of E

Some Answers: 1) 3.61 feet [34° W of N] 6) 3.9 feet [40° E of N]

8) 5 cm [37° E of N]

10) 5.8 cm [29° N of E]

14) 6.6 cm [56° E of S]