

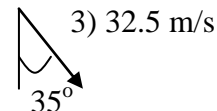
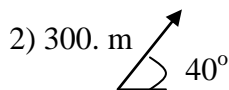
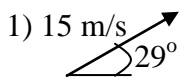
Physics

Vector Sheet

Directions: make no marks on this sheet. Do these problems **on your own paper** and check your answer. The answers are on the left side.

Part 1 - Convert these Angle-Magnitude vectors to Vector-Component vectors.

1) $13 \text{ m/sx} + 7.3 \text{ m/sy}$



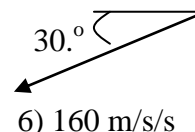
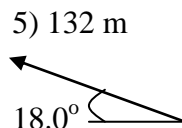
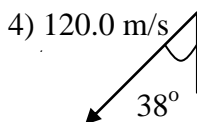
2) $230 \text{ mx} + 190 \text{ my}$

3) $18.6 \text{ m/sx} - 26.6 \text{ m/sy}$

4) $-73.8 \text{ m/sx} - 94.6 \text{ m/sy}$

5) $-126 \text{ mx} + 40.8 \text{ my}$

6) $-140 \text{ m/s/sx} - 80. \text{ m/s/sy}$



Part 2 - Convert these Vector-Component vectors into Angle-Magnitude vectors. Find the angle they make with the x axis

7) 7.8 m, up and right 50.0° above the x axis

7. $5.0 \text{ mx} + 6.0 \text{ my}$

8. $-3.00 \text{ mx} + 7.00 \text{ my}$

8) 7.62 m, left and up 66.8° above the x axis

9. $-4.2 \text{ mx} - 3.2 \text{ my}$

10. $1.12 \text{ mx} - 5.70 \text{ my}$

9) 5.3 m, left and down 37.3° below the x axis

10) 5.81 m, right and down 78.9° below the x axis

Part 3 - Add or Subtract these Vector component vectors from Part 2

11) $2.0 \text{ mx} + 13.0 \text{ my}$

11. #7 + #8

12. #7 - #8

12) $8.0 \text{ mx} - 1.0 \text{ my}$

13) $-1.2 \text{ mx} - 10.2 \text{ my}$

13. #9 - #8

14. #10 + #9

14) $-3.1 \text{ mx} - 8.9 \text{ my}$

Part 4 - Add these Angle-Magnitude vectors analytically, and express their sum as an Angle-Magnitude Vector.

15. (Answer: 18m, right and a little down, 7.7° below the x-axis)

16. (Answer: 44m, right and down, 31° below the x-axis)

