



Chapter: Vectors (EE117)

Worksheet#1a. (Sec: ____)

Definition & Example of Vector:

Position Vector & Displacement Vector:

Equal Vectors & Negative of a Vector:

Scalar Multiplication of a Vector:

Unit Vector:

Resolution of Vector:

Method of Vector Addition:

i. Head to Tail Rule

ii. Parallelogram Law

iii. Law of Cosine

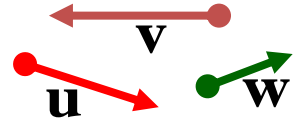


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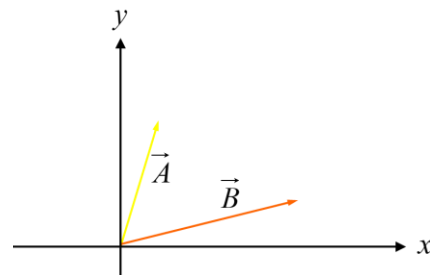
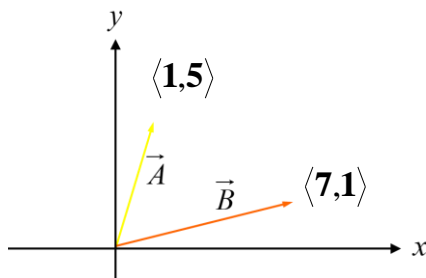
Worksheet#1b. (Sec: __)

Q1. Using the vectors shown, find the following:

- a) $u+v+3w$
- b) $2u+3w+v$
- c) $3u+6v-5w$



Q2. Find the value of resultant?



Q3. The magnitudes of two vectors **A** and **B** are $A = 12$ units and $B = 8$ units. Which of the following pairs of numbers represents the *largest* and *smallest* possible values for the magnitude of the resultant vector $\mathbf{R} = \mathbf{A} + \mathbf{B}$? Explain your answer.

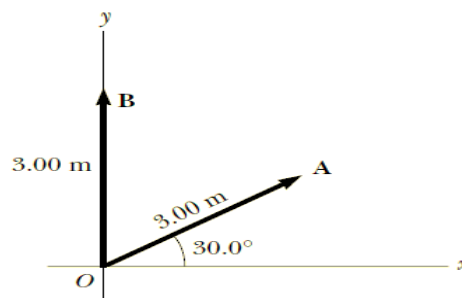
- (a) 14.4 units, 4 units (b) 12 units, 8 units (c) 20 units, 4 units (d) none of these answers.

Q4. A pedestrian moves 6.00 km east and then 13.0 km north. Find the magnitude and direction of the resultant displacement vector using the graphical method.

Q5. Vector **A** has a magnitude of 8.00 units and makes an angle of 45.0° with the positive x axis. Vector **B** also has a magnitude of 8.00 units and is directed along the negative x axis. Using graphical methods, find

- (a) the vector sum $\mathbf{A} + \mathbf{B}$ and (b) the vector difference $\mathbf{A} - \mathbf{B}$.

Q6. Each of the displacement vectors **A** and **B** shown in Fig. 1(a) has a magnitude of 3.00 m. Find graphically (a) $\mathbf{A} + \mathbf{B}$, (b) $\mathbf{A} - \mathbf{B}$, (c) $\mathbf{B} - \mathbf{A}$, (d) $\mathbf{A} - 2\mathbf{B}$. Report all angles counterclockwise from the positive x axis.



Q7. Is it possible to add a vector quantity to a scalar quantity? Explain.

Q8. If the component of vector **A** along the direction of vector **B** is zero, what can you conclude about the two vectors?