A+ Academy – Online Teaching

فيزياء طبية (تحضيري)

Topic: Medical physics

Instructor: Hamza Ahmad

Lecture: (6)

Vectors and motion in two dimension Part (2)

WhatsApp (00962781598320)

تنويه:

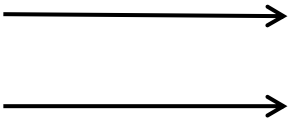
- الأكاديمية تقدم دورات تقوية خاصة، لطلبة الجامعات المختلفة مثل **جامعة العلوم والتكنولوجيا** و**الجامعة الأردنية** داخل الأردن، و**جامعات القدس** و**النجاح** و**الأمريكية** بالضفة الغربية وأي جامعة أخرى جاهزين لتدريس طلبتها.
- الدورات تشمل العديد من المساقات مثل: (الكيمياء العامة والعضوية والتحليلية و الحيوية والبيولوجيا والفيزياء والرياضيات والإحصاء ومواد الطب والصيدلة).
- وبالتالي يا ريت توصل للمهتمين من معارفك واقاربك والدارسين لهذه المواد والذين يجدون صعوبة فيها وبحبوا يلتحقوا بدوراتنا يتواصلوا مع الأستاذ على الواتس اب أو التلغرام.
- طبعا أي دورة تعطى بناء على الخطة المتبعة بهذه الجامعة، ويوجد دروس تجريبية لكل الدورات (عشان الطالب يوخذ فكرة عن آلية التدريس والمدرس قبل ما يدفع ويسجل).
- **الأكاديمية توفر ايضاً خدمة القبول وتسجيل الطلبة داخل الجامعات الأردنية.**

تابعنا على الإنستغرام

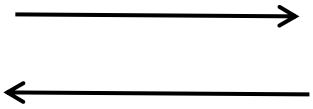
للإستفسار: التواصل مع الإدارة وتلغرام واتساب **(00962787124146)**

- The result of parallel vectors

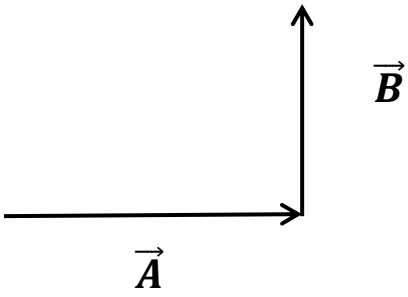
1. When the vector are parallel in the same direction $\Theta = 0$

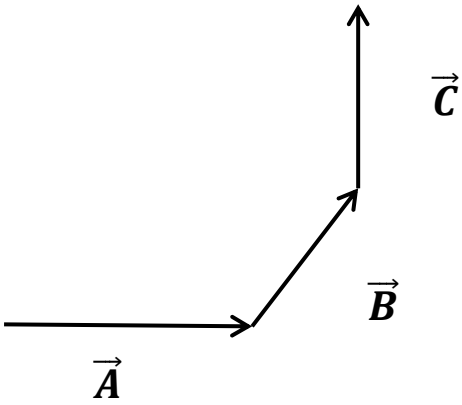


2. When the vector are parallel but in opposite direction $\Theta = 180$

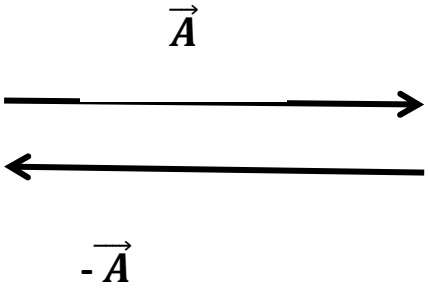


- Addition of the vectors:

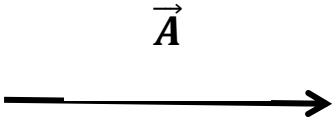




- Negative vector:

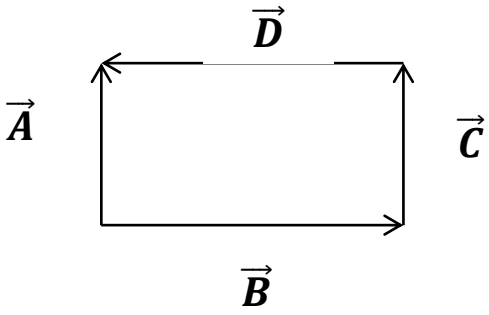


- Subtraction vectors:



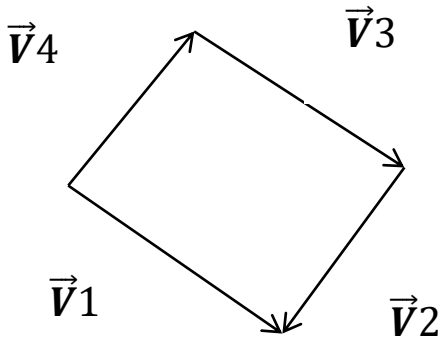
Example (1): The graph side has shown the addition of different vectors, which of the equation is true?

1. $\overrightarrow{B} + \overrightarrow{C} + \overrightarrow{D} = -\overrightarrow{A}$
2. $\overrightarrow{A} + \overrightarrow{B} + \overrightarrow{C} + \overrightarrow{D} = 0$
3. $\overrightarrow{B} + \overrightarrow{C} + \overrightarrow{D} = \overrightarrow{A}$

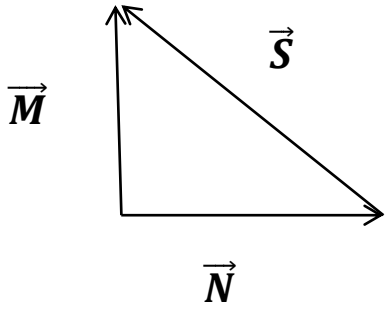


Example (2): which of the following vectors represented the summation of the others?

1. V1
2. V2
3. V3
4. V4

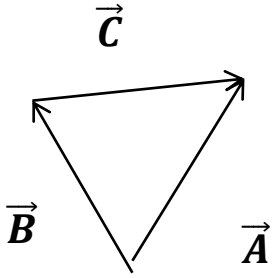


Example (3): The vector $\vec{S}$ expressed in terms of vector $\vec{M}$ and $\vec{N}$ is given by

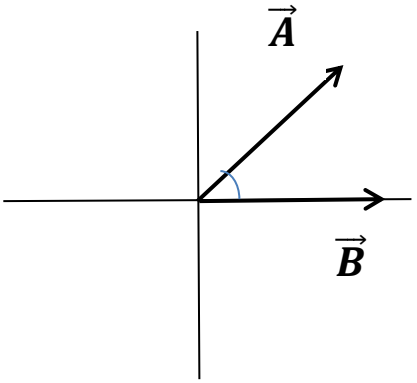


Example (4): The vector $\vec{C}$ in the diagram shown is equal to

1. $\vec{A} + \vec{B}$
2. $\vec{A} - \vec{B}$
3. $\vec{B} + \vec{A}$
4. $-\vec{A} - \vec{B}$

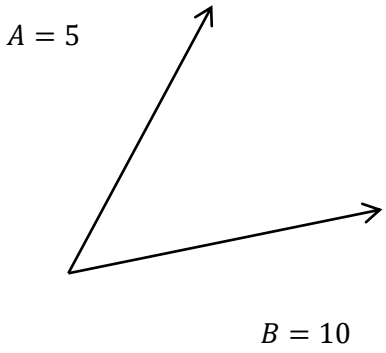


Example (5): As shown in the figure, find the magnitude of $\vec{A} + \vec{B}$, if A =B =10 and the angle between them is 37^o



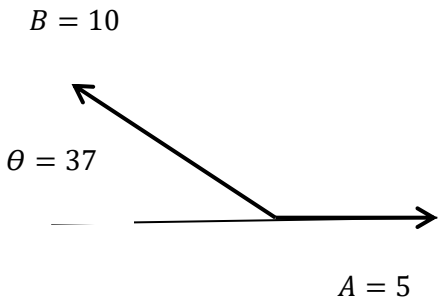
Example (6): As figure shown if the angle between A and B 53^o , Find

1. $\overrightarrow{A} + \overrightarrow{B}$.
2. The magnitude of $\overrightarrow{A} + \overrightarrow{B}$.
3. The magnitude of $\overrightarrow{A} - \overrightarrow{B}$.



Example (7): As figure shown, Find

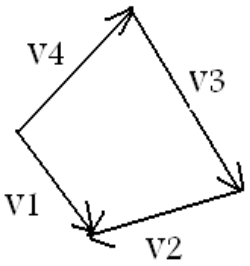
1. The magnitude of $\overrightarrow{A} + \overrightarrow{B}$.
2. The magnitude of $\overrightarrow{A} + 2\overrightarrow{B}$.
3. The magnitude of $\overrightarrow{A} - \overrightarrow{B}$.
4. The magnitude of $2\overrightarrow{A} - 3\overrightarrow{B}$.

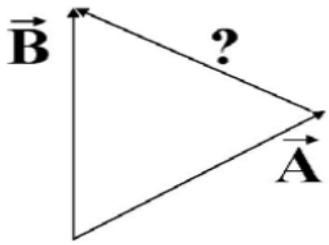


Example (8) If A = 10 and B =8 then $\left|\overrightarrow{A}+\overrightarrow{B}\right|$ is

A. 22
B. 20
C. 1
D. 6

Home work

Q:1	Given the two vectors **A** and **B**. If the magnitude of the vector A is 6 units and the magnitude of the vector B is 4 units, what could be the magnitude of the A+B? A) Between 0 and 10 B) Between – 2 and – 10 C) Between – 2 and 10 D) Between 2 and 10
Q:2	Two displacement vectors have magnitudes 8m and 12m, respectively. When these two vectors are added the magnitude of the sum is A) 20m B) 4 m C) Large than 20 m D) Could be as large as 20 m or as small as 4 m
Q:3	Two vectors **A** and **B**. The magnitude of A is 6 units and the magnitude of B is 8 units. If the angle between the two vectors is 53^0. What is the magnitude of **A**-**B**? A) 6.5 B) 4.8 C) 13.3 D) 12.6
Q:4	Which of the vectors represent the summation of the others? A) V1 B) V2 C) V3 D) V4 
Q:5	Two vectors $\vec{A} = 4a\hat{\imath} - 8b\,\hat{\jmath}$ and $\vec{B} = -26\,\hat{\imath} + 16\hat{\jmath}$ find the constant a and b which saticfied the equation $\overrightarrow{A} + \overrightarrow{B} = 0$. A) A= 6.5 and b =2 B) A= 2 and b =6.2 C) A= 4 and b =2 D) A= 2 and b =4
Q:6	Vector $\vec{A}$ has a magnitude of 8.00 units and makes an angle of 45.0° with the positive x-axis. Vector $\overrightarrow{B}$ also has a magnitude of 8.00 units and is directed along the negative x-axis, Find the magnitude of $\overrightarrow{A} - \overrightarrow{B}$. A) 15.3 B) 12.25 C) 2.70 D) 28.3
Q:7	Two vectors, of magnitudes 20 and 50, are added. Which one of the following is a possible answer for the magnitude of the resultant? A) 10 B) 20 C) 40 D) 80

Q:8	In the diagram shown, the unknown vector is A) $\vec{A} + \vec{B}$ B) $\vec{A} - \vec{B}$ C) $\vec{B} - \vec{A}$ D) $\vec{B} + \vec{A}$ 

1	2	3	4	5	6	7
D	D	A	A	A	A	C