وزارة التربية والتعليم و التعليم الفنى
الإدارة المركزية للتعليم العام
إدارة تنمية مادة الرياضيات

برعاية معالي وزير التربية والتعليم و التعليم الفنى
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وتوجيهات رئيس الإدارة المركزية للتعليم العام

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إشراف علمي

مستشار الرياضيات

أ/ منال عزقول

أداءات وتقييمات لمنهج تطبيقات الرياضيات لغات

للصف الثانى الثانوي "علمى"

الفصل الدراسى الأول

للعام الدراسي 2025 / 2026

الأسبوع الأول

إعداد

أ/ محمد عبد العاطى

مراجعة

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ترجمة

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مراجعة الترجمة

أ/ شريف البرهامى

Classroom Performance (First Week) - Mathematics Applications

(1) Two forces of magnitude 4 , 8 Newton act on a point and form an angle of 120° between them. Find the magnitude of their resultant.

(2) Two forces act on a point. If their maximum resultant is 54 kg. wt and their minimum resultant is 18 kg .wt, find the magnitude of each force.

(3) Two forces act on a point. If the magnitude of the first force is 6 Newton and acts in East direction, and the magnitude of the second force is $6\sqrt{2}$ Newton and acts in a North Western direction, calculate the magnitude of the resultant.

(4) Two forces of magnitude 2F , 3F Newton and the magnitude of their resultant is $\sqrt{13}$ F Newton. Find the measure of the angle between the two forces.

(5) Two perpendicular forces 6 and 8 gm.wt, find the magnitude and direction of their resultant.

(6) Two forces of magnitude 9 , 18 Newton act on a point and their resultant is perpendicular to the first force. Find the measure of the angle between them.

(7) Two perpendicular forces $\overrightarrow{F_1}$, $\overrightarrow{F_2}$ Newton act at a point. Their resultant magnitude is 16 Newton and makes an angle of 30° with $\overrightarrow{F_1}$. Find the magnitude of each of the two forces $\overrightarrow{F_1}$, $\overrightarrow{F_2}$.

(8) **Two forces of equal magnitude meet at a point, and their resultant magnitude is 4 kg.wt. If we reverse the direction of one of them, the resultant magnitude is 3 kg.wt. Find the magnitude of each of the two forces.**

(9) **Two forces of magnitude $\sqrt{3}$ F , 2F dyne act at a point, and their resultant is perpendicular to the first force. Find the angle between the two forces.**

(10) **Find the magnitude of the resultant of two forces of magnitudes 4 Newton, 2 Newton both acting at a point, and the resultant is perpendicular to one of them.**

(11) **Two forces of equal magnitude form an angle of measure 120° between them, and their resultant magnitude is 50 Newton. Find the magnitude of the two forces.**

(12) **Two forces of magnitude 5 , 3 Newton, both act at a point. If the resultant is perpendicular to the second force, find the magnitude of the resultant.**

(13) **Two forces have magnitudes of 7 , F dynes, and the resultant bisects the angle between the two forces. Find the value of F .**

(14) **The measure of the angle between two forces 60°, and the magnitude of their resultant is 7 Newton. Find the magnitude of each of the two forces if the difference between them is 2 Newton.**

(15) **Find the value of two forces of equal magnitude, and the magnitude of their resultant is 42 dynes, if the measure of the angle between them is 90°.**

Homework (Week 1) - Math Applications

(1) Two forces of magnitude 15 , 8 kg.wt act on a point. If the magnitude of their resultant is 13 kg.wt, find the measure of the angle between these two forces.

(2) Two forces meet at a point with a magnitude of 4F , 6F Newton, and the minimum value of their resultant is 24 Newton. Find the maximum value of their resultant.

(3)Two forces of magnitude 8F , 3F kg.wt and the magnitude of their resultant is 5F Kg.wt. Find the measure of the angle between the two forces.

(4) Two forces act on a point. If their minimum resultant is 14 kg. wt and their maximum resultant is 36 kg .wt, find the magnitude of each force.

(5)Two forces of magnitude 24 , 26 Newton act on a point, and their resultant is perpendicular to the first force. Find the magnitude of their resultant .

(6) Two forces of equal magnitude form an angle of measure 60° between them, and their resultant magnitude is $30\sqrt{3}$ Newton. Find the magnitude of the two forces.

(7) Two forces of equal magnitude meet at a point, and their resultant magnitude is 24 kg.wt. If we reverse the direction of one of them, the resultant magnitude is 7 kg.wt. Find the magnitude of each of the two forces.

(8) Two forces of magnitude 7 Newton, 14 Newton act at a point, and their resultant is perpendicular to the first force. Find the measure of the angle between the two forces.

(9) Find the value of two forces of equal magnitude, and the magnitude of their resultant is 6 dynes, if the measure of the angle between them is 90°.

(10) Two forces of magnitude F , $\sqrt{2}$ Newton and the resultant bisect the angle between them , Find the value of F .

(11) Two perpendicular forces 9 and 40 dynes, find the magnitude and direction of their resultant.

(12) Two forces of magnitude F , 2F Newton act on a point and their resultant is perpendicular to the first force. Find the measure of the angle between them.

(13) The measure of the angle between two forces 120°, and the magnitude of their resultant is 61 Newton. Find the magnitude of each of the two forces if the difference between them is 9 Newton.

(14) Two perpendicular forces $\overrightarrow{F_1}$, $\overrightarrow{F_2}$ newtons act at a point. Their resultant magnitude is 84 newtons and makes an angle of 60° with $\overrightarrow{F_1}$. Find the magnitude of each of the two forces $\overrightarrow{F_1}$, $\overrightarrow{F_2}$.

(15) Find the magnitude of the resultant of two forces of magnitude 4 Newton, 8 Newton both act at a point, and the resultant is perpendicular to one of them.

Weekly Assessment (Week Two) - Mathematics Applications

Group One

(1) Two forces of magnitude are 5 and 12 newtons. If the measure of the angle between the two forces is α where $\alpha \in [0, \frac{\pi}{2}]$. find the interval in which the magnitude of the resultant of the two forces belongs , measured in newtons.

(2) Two forces of magnitude are F , 15 newtons acting at a point, and the measure of the angle between them is 120°, and the magnitude of their resultant are F newtons. Find the value of F in newtons.

(3) Resolve a force of 60 newtons into two components inclined in the direction of the force at angles of measures 60° , 45° measuring in opposite directions. to the nearest tenth .

(4) A force of magnitude 70 Newtons acts in a southeasterly direction. Find its components in the south and east directions.

(5) Place a body weighing 200 Newtons on a plane inclined at an angle of45° to the horizontal. Find the value of its weight component in the direction of the plane's greatest slope.

Group Two

(1) Two forces of magnitude are 10 and 24 newtons. If the measure of the angle between the two forces is α where $\alpha \in [0, \frac{\pi}{2}]$. find the interval in which the magnitude of the resultant of the two forces belongs , measured in newtons.

(2) Two forces of magnitude are F , 9 newtons acting at a point, and the measure of the angle between them is 120°, and the magnitude of their resultant are F newtons. Find the value of F in newtons.

(3) Resolve a force of 150 newtons into two components inclined in the direction of the force at angles of measures 60° , 45° measuring in opposite directions. to the nearest tenth .

(4) A force of magnitude 22 newtons acts in a northeasterly direction. Find its components in the north and easterly directions.

(5) A body of weight 60 newtons is placed on a plane inclined at an angle of 60° to the horizontal. Find the value of its weight component in the direction of the plane's greatest slope.

Group Three

(1) Two forces of magnitude are 9 and 12 newtons. If the measure of the angle between the two forces is α where $\alpha \in [0, \frac{\pi}{2}]$. find the interval in which the magnitude of the resultant of the two forces belongs , measured in newtons.

(2) Two forces of magnitude are F , 11 newtons acting at a point, and the measure of the angle between them is 120°, and the magnitude of their resultant are F newtons. Find the value of F in newtons.

(3) Resolve a force of 300 newtons into two components inclined in the direction of the force at angles of measures 60° , 45° measuring in opposite directions. to the nearest tenth .

(4) A force of magnitude 7 Newtons acts in a northwesterly direction. Find its components in the north and west directions.

(5) A body of weight 45 Newtons is placed on a plane inclined at an angle of 30° to the horizontal. Find the value of its weight component in the direction of the plane's greatest slope.