



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

برعاية معالي وزير التربية والتعليم و التعليم الفنى السيد الأستاذ/ محمد عبد اللطيف

وتوجيهات رئيس الإدارة المركزية للتعليم العام
المشرف على مستشارى المواد الدراسية

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إشراف علمي
مستشار الرياضيات
أ/ منال عزقول

أداءات وتقييمات لمنهج تطبيقات الرياضيات لغات

للسف الثانى الثانوى "علمى"
الفصل الدراسى الثانى
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الأسبوع الأول

إعداد

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1 الأداء الصفّي - الصف الثاني الثانوي - علمى - تطبيقات الرياضيات لغات - الأسبوع الأول **1**

- (1) Convert each of the following units to their corresponding units:
- 20 kg.wt to Newton
 - 54 km/h to m/s
 - 1960 Newton to kg.wt
 - 0.5 gm.wt to Dyne
- (2) A particle moves so that the vector of its position \vec{r} is given as a function of time in terms of the two fundamental unit vectors \hat{i}, \hat{j} by the relation :
 $\vec{r}(t) = (6t + 1)\hat{i} + (8t - 2)\hat{j}$ find:
the norm of the displacement vector up to the moment $t = 3$
- (3) Find the distance in kilometers traveled by a car moving at a uniform speed 81 km/h for 20 minutes.
- (4) Find the hourly time taken by a car moving at a uniform speed of 20 m/s to cover a distance of 72 km .
- (5) A runner moves 30 meters East, then moves 40 meter North. Calculate the distance and the displacement cut by the runner .
- (6) A cyclist traveled 50 km on a straight road at a speed of 20 km/h and then returned on the same road. He traveled 18 km in the opposite direction at a speed of 12 km / h . Find its average velocity vector for the whole journey and then find the average speed for the whole journey.
- (7) A cyclist covered 32 km on a straight road at a speed of 16 km/h, then traveled 27 km in the same direction at a speed of 9 km/h. Find the vector of its average velocity during the entire trip, then find the average speed during the entire trip.

- (8) A particle was present at two-time moments 3 and 8 seconds at the two positions A(3, 6) and B(7, 9) respectively. Find: the average velocity vector of the particle during this time period, then find the magnitude and direction of this velocity.
- (9) If the position vector of a particle moving in a straight line from point O is given as a function of time t (second) by the relation: $\vec{r} = (t^2 + 1) \hat{c}$, find the magnitude of the displacement vector \vec{s} after 3 seconds, where the magnitude of \vec{r} is in meter.
- (10) Two cars moved simultaneously from Benha heading to Cairo at a constant speed for each of them. If the speed of the first car is 98 km/h, and the speed of the second car is 42 km/h, how long will the driver of the first car waits until he catches up with the driver of the second car at the end of the journey which is 49 km long?

1 الأداء المنزلي - الصف الثاني الثانوي - علمي - تطبيقات الرياضيات لغات - الأسبوع الأول 1

(1) Convert each of the following units to their corresponding units:

- 10 kg.wt to Newton
- 72 km/h to m/s
- 65000 Dyne to Newton
- 4900 Dyne to gm wt

(2) A particle moves so that the vector of its position \vec{r} is given as a function of time in terms of the two fundamental unit vectors \hat{i}, \hat{j} by the relation :

$$\vec{r}(t) = (4t + 2)\hat{i} + (3t - 1)\hat{j} \text{ find:}$$

Norm of the Displacement vector up to the moment $t = 4$

(3) Find the distance in kilometers traveled by a car moving at a uniform speed 56 km/h for 15 minutes.

(4) Find the hourly time taken by a car moving at a uniform speed of 40 m/s in a distance of 36 km.

(5) A runner moves 120 meters East, then moves 50 meters North. Calculate the distance and the displacement cut by the runner.

(6) A cyclist traveled 30 km on a straight road at a speed of 15 km/h and then returned on the same road He traveled 20 km in the opposite direction at a speed of 20 km / h . Find its velocity vector for the whole journey and then find the average velocity magnitude for the whole journey.

(7) A cyclist covered 42 km on a straight road at a speed of 14 km/h, then traveled 6 km in the same direction at a speed of 6 km/h. Find the vector of its average velocity during the entire trip, then find the average speed during the entire trip.

- (8) A particle was present at two-time moments 3 and 7 seconds at positions A(5, 2) and B(9, 10) respectively. Find: the average velocity vector of the particle during this time period, then find the magnitude and direction of this velocity.
- (9) If the position vector of a particle moving in a straight line from the origin point (O) is given as a function of time t (seconds) by the relation: $\vec{r} = (2t^2 + 3)\hat{c}$, find the magnitude of the displacement vector \vec{s} after 2 second, where the magnitude of \vec{r} is in meter.
- (10) Two cars moved simultaneously from Benha heading to Cairo at a constant speed for each of them. If the speed of the first car is 70 km/h, and the speed of the second car is 84 km/h, how long will the driver of the second car waits until he catches up with the driver of the first car at the end of the journey which is 49 km long?