اسئلة استرشادية للصف الثانى الثانوى

رياضيات (٢) للقسم العلمى باللغه الانجليزية

Q1

The magnitude of the maximum resultant of two forces F_1 , F_2 is 10 Newton and the magnitude of the minimum resultant of the two forces is 2 Newton. then $F_1^2 - F_2^2$ =……, when $F_1 > F_2$

a) 20

b) 24

c) 8

d) 12

Q2

If F_1 = 5 Newton, F_2 = 4 Newton act at a point, and α is the angle between their lines of action of the two forces, sin $\alpha = \frac{3}{5}$ then the magnitude of their resultant =……, $\alpha \in \left]0 , \frac{\pi}{2}\right[$

a) $\sqrt{65}$

b) $\sqrt{11}$

c) 3

d) $\sqrt{73}$

Q3

A regular quadrilateral pyramid, its volume 96 cm^3 , its height 8 cm,

Then its base side length =…….cm

a) 72

b) 36

c) 6

d) 12

Q4

A right circular cone, its base area 36 π cm^2 , its height 8 cm,çthen its drawer length = ……cm

a) 12

b) 10

c) 8

d) 6

Q5

$\overline{BC}$ is a uniform rod of length one meter and its weight (w) Newton is suspended from its two ends by two perpendicular strings their other end fixed at a point on the ceiling of a room , if the length of one of the two strings equals 50 $\sqrt{3}$ cm, find the magnitude of the tension in strings in terms of the weight of the rod (w).

Q6

Two forces are meeting a point the magnitude of their maximum resultant = 14 Newton and when the two forces are perpendicular the magnitude of their resultant = 10 Newton, then F_1 =…… Newton,

F_2 =…….. Newton

a) 6 , 8

b) 9 , 5

c) $5\sqrt{2}$, $5\sqrt{2}$

d) 5 , $5\sqrt{3}$

Q7

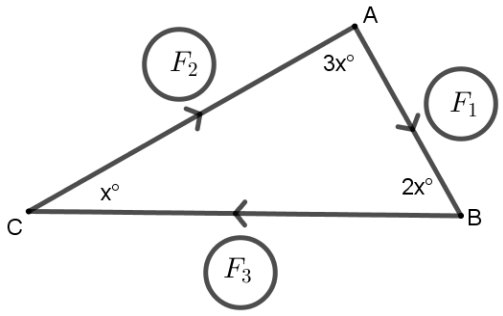
The coplanar forces of magnitudes 1, 2, $3\sqrt{3}$, 4 Newton are acting at a point where the measure of the angle between the directions of the first force and the second force is $\frac{\pi}{3}$, the second force and the third force is $\frac{\pi}{2}$ and between the third force and the fourth force is $\frac{5\pi}{6}$.

Find the magnitude and the direction of their resultant.

Q8

In the opposite figure:

Δ ABC is the triangle of forces of the three equilibrium forces that act at a point.



Then $F_1 : F_2$ =…….

a) 1 : 2

b) 1 : $\sqrt{3}$

c) 2 : 3

d) $\sqrt{3}$: 2

Q9

Two forces of magnitude 8 and F Newton act at a point, the measure of the angle between them is 135°, if the resultant inclined with an angle of measure 45° to the force F, then:

F =……. Newton

a) $8\sqrt{2}$

b) 8

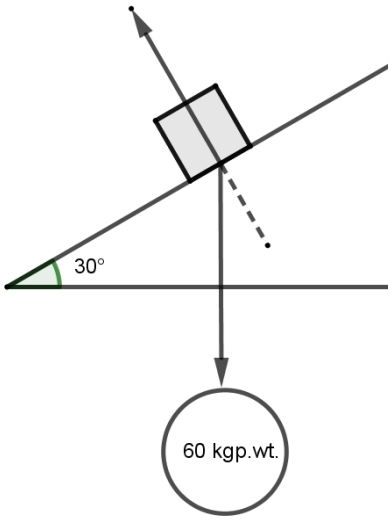
c) $18\sqrt{2}$

d) $16\sqrt{2}$

Q10

In the opposite figure:

The component of the weight in the direction of the line of the greatest slope =……. kg wt, the component of weight in direction perpendicular to plane = …… kg wt.



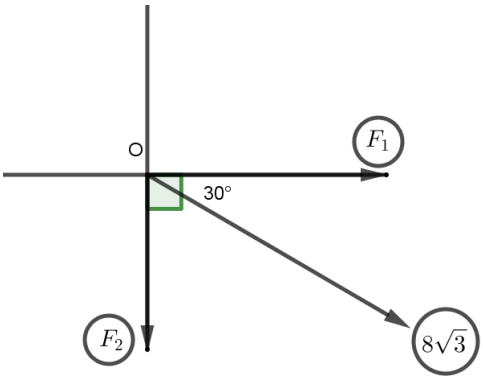
a) $30\sqrt{3}$, 60

b) 60 $\sqrt{3}$, 60

c) 60 , $60\sqrt{3}$

d) 30 , $30\sqrt{3}$

Q11



Force of magnitude 8 $\sqrt{3}$ Newton is resolved into two perpendicular forces F_1 , F_2 ,then $\frac{F_1}{F_2}$ =.....

a) $\sqrt{3}$

b) $\frac{1}{\sqrt{3}}$

c) $\frac{\sqrt{3}}{2}$

d) $\frac{1}{2}$

Q12

A regular quadrilateral pyramid, the perimeter of its base is 16 cm and whose height 9 cm is put inside a container in the shape of a right circular cylinder, contains water. If the level of water raises $\frac{21}{88}$ cm, Find the radius length of the base of the cylinder given that ($\pi \simeq \frac{22}{7}$).