

اسئلة استرشادية للصف الثانى الثانوى
رياضيات (٢) للقسم العلمى باللغة 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 $F_1^2 - F_2^2 = \dots\dots\dots$, 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 $36 \pi \text{ cm}^2$, its height 8 cm, then
its slant 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 $F_1 = \dots\dots$ Newton,

$F_2 = \dots\dots\dots$ Newton

a) 6 , 8

b) 9 , 5

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

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

Q7

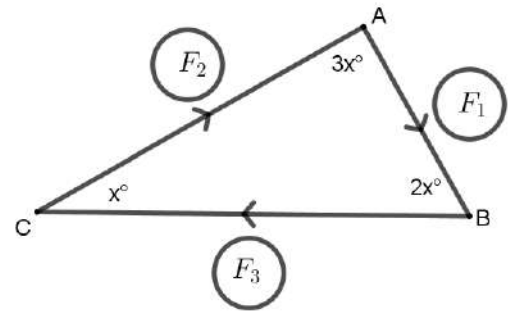
The coplanar forces of magnitudes 1, 2, $3\sqrt{3}$, 4 Newton are acting at a point where the measure of the angle between the directions of the first force and the second force is $\frac{\pi}{3}$, the second force and the third force is $\frac{\pi}{2}$ and between the third force and the fourth force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

Find the magnitude and the direction of their resultant.

Q8

In the opposite figure:

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



Then $F_1 : F_2 = \dots\dots\dots$

- 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:

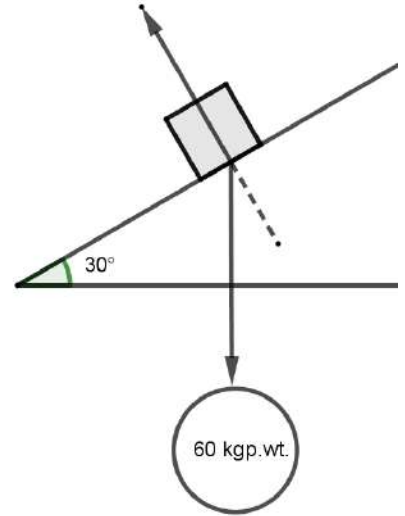
The component of the weight in the direction of the line of the greatest slope = kg wt, the component of weight in direction perpendicular to plane = kg wt.

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

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

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

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



Q11

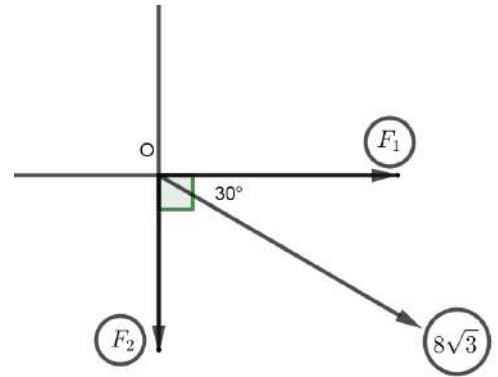
Force of magnitude $8\sqrt{3}$ Newton is resolved into two perpendicular forces F_1 , F_2 , then $\frac{F_1}{F_2} = \dots$

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 $(\pi \simeq \frac{22}{7})$.