

Solution of the day/Sep-8, 2018

6th Class

➤ Mathematics:

Sol. In final mixture, we have :Quantity of milk = $\left(\frac{6}{7} + \frac{5}{7} + \frac{3}{4}\right) = \frac{65}{28}$

Quantity of water = $\left(\frac{1}{7} + \frac{2}{7} + \frac{1}{4}\right) = \frac{19}{28}$ \therefore Milk : water = $\frac{65}{28} : \frac{19}{28} = 65:19$

➤ Physics: Ans: (A)

➤ Chemistry: Ans: (A)

➤ Biology: Ans: False

7th Class

➤ Mathematics: Ans: (C)

➤ Physics: Ans: (C)

➤ Chemistry: Ans: (B)

➤ Biology: Ans: (C)

8th class

➤ Mathematics:

Sol: Consider a ΔABC in which $\angle B = 90^\circ$ and $\angle BAC = \theta$.

Then, $\sin\theta = \frac{BC}{AC} = \frac{1}{2}$.

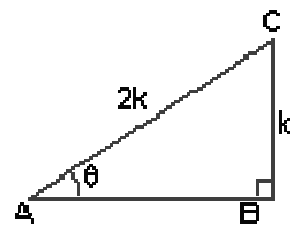
Let $BC = k$ and $AC = 2k$, where k is constant of proportionality.

By Pythagoras' theorem, we have

$$AC^2 = (AB^2 + BC^2) \Rightarrow AB^2 = (AC^2 - BC^2) \Rightarrow (4k^2 - k^2) = 3k^2 \Rightarrow AB = \sqrt{3}k$$

$$\therefore \cos\theta = \frac{AB}{AC} = \frac{\sqrt{3}k}{2k} = \frac{\sqrt{3}}{2} \Rightarrow (3\cos\theta - 4\cos^3\theta) = \left(\frac{3\sqrt{3}}{2} - 4 \times \frac{3\sqrt{3}}{8}\right) = 0$$

Hence, $(3\cos\theta - 4\cos^3\theta) = 0$.



➤ Physics: Ans: Y-axis

➤ Chemistry: Ans: (B)

➤ Biology: Ans: (C)

9th Class

➤ Mathematics:

Sol: (C) Put $A = 90^\circ$ in the given expression, we get ;

$$G.E = \left(\frac{\sqrt{3}+0}{1-2}\right)^{-3} + \left(\frac{1+2}{\sqrt{3}-0}\right)^{-3} = -\left(\frac{1}{\sqrt{3}}\right)^3 + \left(\frac{1}{\sqrt{3}}\right)^3 = 0$$

➤ Physics: Ans: $g \frac{t^2}{8}$

➤ Chemistry: Ans: (A)

➤ Biology: Ans: (B)

10th class

➤ Mathematics:

Sol: Since, $\tan \theta = 1 = \tan 45^\circ \Rightarrow \theta = 45^\circ$

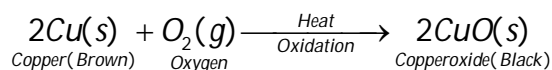
$$\text{And } \sin \phi = \frac{1}{\sqrt{2}} = \sin 45^\circ \Rightarrow \phi = 45^\circ$$

$$\text{Now, } \cos(\theta + \phi) = \cos(45^\circ + 45^\circ) \Rightarrow \cos(\theta + \phi) = \cos 90^\circ = 0$$

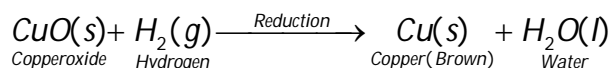
➤ Physics: Ans: (D)

➤ Chemistry:

Sol : (i) Step I Combination reaction/oxidation reaction



Step II Reduction reaction



(ii) Copper metal is taken initially in the powdered form.

➤ Biology: Ans: (B)

➤ Reasoning :

Sol: Subtract 1, 3, 5, 7, 9, 11 from successive numbers. So, 34 is the odd man. Hence, (B)