

Solution of the day/Sep-29, 2018

6th Class

- **Mathematics:** Ans: $3x^2 - 8y^2 + 4xy$
- **Physics:** Ans: (C)
- **Chemistry:** Ans: False
- **Biology:** Ans: (D)

7th Class

- **Mathematics:**
Ans: Putting the value of $n = -2$, in $5n - 2$, we get
$$5(-2) - 2 = -10 - 2 = -12$$
- **Physics:** Ans: (A)
- **Chemistry:** Ans: (C)
- **Biology:** Ans: (C)

8th class

- **Mathematics:**
Sol: $a \cos \theta - b \sin \theta = c$
Squaring both the sides
$$= a^2 \cos^2 \theta + b^2 \sin^2 \theta - 2ab \sin \theta \cos \theta = c^2$$
$$= a^2(1 - \sin^2 \theta) + b^2(1 - \cos^2 \theta) - 2ab \sin \theta \cos \theta = c^2$$
$$= a^2 - a^2 \sin^2 \theta + b^2 - b^2 \cos^2 \theta - 2ab \sin \theta \cos \theta = c^2$$
$$\Rightarrow a^2 + b^2 - c^2 = a^2 \sin^2 \theta + b^2 \cos^2 \theta + 2ab \sin \theta \cos \theta$$
$$\Rightarrow a^2 + b^2 - c^2 = (a \sin \theta + b \cos \theta)^2$$
$$\Rightarrow (a \sin \theta + b \cos \theta) = \pm \sqrt{a^2 + b^2 - c^2}$$
- **Physics:** Ans: (B)
- **Chemistry:** Ans: (i)- b, (ii)- d, (iii)- a, (iv)- c
- **Biology:** Ans: (B)

9th Class

- **Mathematics:** Ans: (C)
- **Physics:** Ans: (B)
- **Chemistry:** Ans: (B)
- **Biology:** Ans: (A)

10th class

- **Mathematics:**

Sol: $\cos(A + B) = \cos A \cos B - \sin A \sin B$

On replacing A by 45° and B by 30° , we get

$$\cos(45^\circ + 30^\circ) = \cos 45^\circ \cos 30^\circ - \sin 45^\circ \sin 30^\circ$$

$$= \left(\frac{1}{\sqrt{2}}\right)\left(\frac{\sqrt{3}}{2}\right) - \left(\frac{1}{\sqrt{2}}\right)\left(\frac{1}{2}\right) = \frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}} = \frac{\sqrt{3}-1}{2\sqrt{2}}$$

- **Physics:** Ans: (C)
- **Chemistry:** Ans: (B, C, D)
- **Biology:** Ans: (D)
- **Reasoning :**

Sol : ? = $97 + 40 = 137$

