

Solution of the day/Sep-24, 2018

6th Class

➤ **Mathematics:**

Ans: $7x^2 + xy - 6y^2$

➤ **Physics:** Ans: (D)

➤ **Chemistry:** Ans: Physical, chemical

➤ **Biology:** Ans: (B)

7th Class

➤ **Mathematics:**

Sol: (C) $m = 30$

$$p - 4 = 8$$

$$p = 12$$

$$m + p = 30 + 12 = 42$$

➤ **Physics:** Ans: (D)

➤ **Chemistry:** Ans: a-p; b-p; c-s; d-s

➤ **Biology:** Ans: (A)

8th class

➤ **Mathematics:**

$$\begin{aligned} \text{Sol: LHS} &= \sqrt{\frac{1+\sin\theta}{1-\sin\theta}} + \sqrt{\frac{1-\sin\theta}{1+\sin\theta}} \\ &= \frac{\sqrt{1+\sin\theta}}{\sqrt{1-\sin\theta}} + \frac{\sqrt{1-\sin\theta}}{\sqrt{1+\sin\theta}} = \frac{(1+\sin\theta) + (1-\sin\theta)}{\sqrt{(1-\sin\theta)(1+\sin\theta)}} \\ &= \frac{2}{\sqrt{1-\sin^2\theta}} = \frac{2}{\sqrt{\cos^2\theta}} = \frac{2}{\cos\theta} = 2\sec\theta = \text{RHS} \end{aligned}$$

$$\text{Hence, } \sqrt{\frac{1+\sin\theta}{1-\sin\theta}} + \sqrt{\frac{1-\sin\theta}{1+\sin\theta}} = 2\sec\theta.$$

➤ **Physics:** Ans: (C)

➤ **Chemistry:** Ans: Period

➤ **Biology:** Ans: (D)

9th Class

➤ Mathematics:

$$\begin{aligned}\text{Sol: } L.H.S &= \tan^2 \theta - \sin^2 \theta = \frac{\sin^2 \theta}{\cos^2 \theta} - \frac{\sin^2 \theta}{1} \\ &= \frac{\sin^2 \theta - \sin^2 \theta \cos^2 \theta}{\cos^2 \theta} = \frac{\sin^2 \theta (1 - \cos^2 \theta)}{\cos^2 \theta} \quad \left[\begin{array}{l} \because \tan \theta = \frac{\sin \theta}{\cos \theta} \\ 1 - \cos^2 \theta = \sin^2 \theta \end{array} \right] \\ &= \frac{\sin^2 \theta}{\cos^2 \theta} (1 - \cos^2 \theta) = \tan^2 \theta \sin^2 \theta = R.H.S\end{aligned}$$

➤ **Physics:** Ans: (A)

➤ **Chemistry:** Ans: (C)

➤ **Biology:** Ans: (D)

10th class

➤ Mathematics:

$$\begin{aligned}\text{Sol: } & \frac{1}{4}(\cot^4 30^\circ - \operatorname{cosec}^4 60^\circ) + \frac{3}{2}(\sec^2 45^\circ - \tan^2 30^\circ) - 5 \cos^2 60^\circ \\ &= \frac{1}{4} \left[(\sqrt{3})^4 - \left(\frac{2}{\sqrt{3}}\right)^4 \right] + \frac{3}{2} \left[(\sqrt{2})^2 - \left(\frac{1}{\sqrt{3}}\right)^2 \right] - 5 \left(\frac{1}{2}\right)^2 \\ &= \frac{1}{4} \left[9 - \frac{16}{9} \right] + \frac{3}{2} \left[2 - \frac{1}{3} \right] - 5 \times \frac{1}{4} = \frac{1}{4} \left[\frac{81-16}{9} \right] + \frac{3}{2} \left[\frac{5}{3} \right] - \frac{5}{4} \\ &= \frac{65+90-45}{36} = \frac{110}{36} = \frac{55}{18}\end{aligned}$$

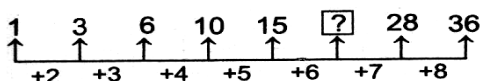
➤ **Physics:** Ans: (B)

➤ **Chemistry:** Ans: (A)

➤ **Biology:** Ans: (C)

➤ Reasoning :

Sol: (D)



$$? = 15 + 6 = 21$$

