

Question of the Day-8

August 06 2018

Solutions

Class 6<sup>th</sup>

**Mathematics:**

Ans : (D) 63

Sol : It is given that  $\frac{5}{9} = \frac{35}{?}$

We know that  $35 = 5 \times 7$

So, we multiply the numerator and denominator by 7

$$\frac{5}{9} = \frac{5 \times 7}{9 \times 7} = \frac{35}{63}. \text{ Hence } 5 : 9 = 35 : 63$$

**Physics:**

Ans : (C) 70 kg = 70 kilogram

**Chemistry:**

Ans : (B)

**Biology:**

Ans : (C)

Class 7<sup>th</sup>

**Mathematics:**

Ans : (A) 1

Sol :

$$\frac{1}{1 + \frac{x^a}{x^b}} + \frac{1}{1 + \frac{x^b}{x^a}}$$
$$\frac{x^b}{x^b + x^a} + \frac{x^a}{x^a + x^b} = 1$$

**Physics: ans: 1**

**Chemistry:**

Ans: (D)

**Biology:**

Ans : (D)

Class 8<sup>th</sup>

**Mathematics:** Ans : (A)

Sol :  $x \cos \theta + y \sin \theta = a \rightarrow \boxed{1}$

$x \sin \theta - y \cos \theta = b \rightarrow \boxed{2}$

Squaring and adding  $\boxed{1}$  &  $\boxed{2}$

**Physics:**

Ans : A-t, B-u, C-s, D-q, E-r, F-p

**Chemistry:**

Ans : (A)

**Biology:**

Ans : (C)

### Class 9<sup>th</sup>

#### Mathematics:

Ans : (C) 1

$$\begin{aligned}\text{Sol : } \frac{x}{a} &= \cos^3 \theta & \frac{y}{b} &= \sin^3 \theta \\ \left(\frac{x}{a}\right)^{\frac{1}{3}} &= \cos \theta & \left(\frac{y}{b}\right)^{\frac{1}{3}} &= \sin \theta \\ \left(\frac{x}{a}\right)^{\frac{2}{3}} &= \cos^2 \theta \rightarrow \boxed{1} & \left(\frac{y}{b}\right)^{\frac{2}{3}} &= \sin^2 \theta \rightarrow \boxed{2} \\ \text{Add } \boxed{1} &\& \boxed{2}\end{aligned}$$

#### Physics:

(i)  $\vec{A}_B = \hat{j}9$

(ii)  $\vec{A}_C = -i14 + \hat{j}8$

(iii)  $\vec{A}_D = -\hat{i}15 + \hat{j}3$

(iv)  $\vec{A}_E = -\hat{i}10$

(v)  $\vec{A}_F = \hat{i}6 + \hat{j}6$

(vi)  $\vec{A}_G = \hat{i}7 - \hat{j}3$

#### Chemistry:

Ans : (B)

#### Biology:

Ans : (D)

### Class 10<sup>th</sup>

#### Mathematics:

Ans : (D)

$$\begin{aligned}\text{Sol : } \frac{(1 - \cos \theta) + \sin \theta}{(1 + \cos \theta) + \sin \theta} &= \frac{2 \sin^2 \frac{\theta}{2} + 2 \sin \frac{\theta}{2} \cos \frac{\theta}{2}}{2 \cos^2 \frac{\theta}{2} + 2 \sin \frac{\theta}{2} \cos \frac{\theta}{2}} \\ &= \frac{2 \sin \frac{\theta}{2} \left[ \sin \frac{\theta}{2} + \cos \frac{\theta}{2} \right]}{2 \cos \frac{\theta}{2} \left[ \cos \frac{\theta}{2} + \sin \frac{\theta}{2} \right]} = \tan \frac{\theta}{2}\end{aligned}$$

Physics: ans: C

#### Chemistry:

Sol : Double displacement reactions are also known as precipitation reactions because they are accompanied by the formation of a precipitate.

#### Biology:

Ans : (C)

#### Reasoning :

Ans : (A)

Sol : 27 is not divisible by 7