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Holiday homework
Sub- maths
Class 11th

Sets

1. If $A = \{1, 2, 3, 4, 5\}$, $B = \{1, 3, 5, 8\}$, $C = \{2, 5, 7, 8\}$, verify that $A - (B \cup C) = (A - B) \cap (A - C)$.
2. Decide, among the following sets are subsets of one and another :
 $A = \{x : x \in \mathbb{R} \text{ and } x \text{ satisfy } : x^2 - 4x + 3 = 0\}$
 $B = \{1, 3\}$,
 $C = \{1, 3, 5\}$, $D = \{4, 5, 6\}$.
3. Let A and B be two finite sets such that $n(A - B) = 30$, $n(A \cup B) = 180$, $n(A \cap B) = 60$, find $n(B)$
4. Write the set $A = \{x : x \in \mathbb{N} \text{ and } x^2 < 25\}$ in roster form.
5. In a survey it was found that 21 people liked product A, 26 liked product B and 29 liked C. If 14 people liked products A and B, 12 people liked products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked
(i) product C only
(ii) product A and C but not product B
(iii) at least one of three products.
6. In a survey of 60 people, it was found that 25 people read newspaper H, 26 read newspaper T, 26 read newspaper I, 9 read both H and I, 11 read both H and T, 8 read both T and I, 3 read all three newspapers. Find
(i) the number of people who read at least one of the newspapers.
(ii) the number of people who read exactly one newspaper.
7. If X and Y are two sets such that $n(X) = 17$, $n(Y) = 23$ and $n(X \cup Y) = 38$, find $n(X \cap Y)$.

RELATION AND FUNCTION

1. Let $A = \{1, 2\}$ and $B = \{3, 4\}$. Write $A \times B$. How many subsets will $A \times B$ have? List them.
2. Let $A = \{1, 2, 3, \dots, 14\}$. Define a relation R from A to A by $R = \{(x, y) : 3x - y = 0, \text{ where } x, y \in A\}$. Write down its domain, co-domain and range.
3. Let $A = \{9, 10, 11, 12, 13\}$ and let $f: A \rightarrow \mathbb{N}$ be defined by $f(n) =$ the highest prime factor of n. Find the range of f.
4. Find the domain and the range of the real function f defined by $f(x) = |x - 1|$.
5. Let $A = \{1, 2, 6, 8\}$ and let R be a relation on A defined by $\{(a, b) : a, b \in A, b \text{ is exactly divisible by } a\}$

- Write R in roster form.
- Find the domain of R.
- Find the range of R.

6. Under which condition a relation f from A to B is said to be a function ?

TRIGONOMETRIC FUNCTIONS

- Evaluate : $\sin(40^\circ + \theta)\cos(10^\circ + \theta) - \cos(40^\circ + \theta)\sin(10^\circ + \theta)$ 2.
Prove that $\cot x \cot 2x - \cot 2x \cot 3x - \cot 3x \cot x = 1$.
- Find the value of $\sin 150^\circ + \cos 300^\circ$.
- If in two circles, arcs of the same length subtend angles 75° and 120° at the centre, find the ratio of their radii.
- Write the value of $\tan 15^\circ$.
- Find the value of $\cos 55^\circ + \cos 125^\circ + \cos 300^\circ$.
- Prove that: $(\sin 3x + \sin x) \sin x + (\cos 3x - \cos x) \cos x = 0$.
- If $\cot 2A = \tan(n - 2)A$, then what is A?
- Prove that $\cos^2 A + \cos^2 B - 2 \cos A \cos B \cos (A+B) = \sin^2 (A+B)$

COMPLEX NUMBERS AND QUADRATIC EQUATIONS

- Solve the equation $2x^2 + x + 1 = 0$.
- Convert the complex number $z = \frac{1-i}{\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}}$ in the polar form
- Solve : $x^2 + 2 = 0$
- Convert the given complex number in polar form: -3 .
- Express $i^9 + i^{10} + i^{11} + i^{12}$ in the form $a+ib$
- Express : $i^9 + i^{19}$ in form of $a+ib$
- Find

the modulus of $\frac{1+i}{1-i} - \frac{1-i}{1+i}$.

- If $\left(\frac{1+i}{1-i}\right)^m = 1$, then find the least positive integral value of m .

Autumn break holidays Home work 2022

Chemistry. Claa 11

1. Solve PT 1 Chemistry paper
2. Prepare chart showing Periodic table
3. First 30 elements electronic configuration
4. Quantum numbers and significance
5. Numericals from chapters 1& 2.

शरदकालीन अवकाश गृहकार्य - 2022
कक्षा - ग्यारहवीं

प्रश्न 1 .अर्धवार्षिक परीक्षा में आने वाले सभी पाठों को याद करना है ।

प्रश्न २. किसी घटना /स्थिति के आधार पर दृश्य लेखन लिखिए -

प्रश्न 3.जनसंचार के प्रमुख माध्यमों (विभिन्न माध्यमों के लिए लेखन पाठ पर आधारित) पर आधारित बीस बहुविकल्पीय प्रश्न तैयार करिए -

प्रश्न 4. "कोरोना एक महामारी" विषय पर फ्रीचर लिखिए -
अथवा

"विद्यार्थी और ऑनलाइन कक्षाएँ" विषय पर आलेख लिखिए-

Autumn break holidays Home work 2022

PHYSICS CLASS 11A

- 1) Slove PT-1 question paper
- 2) Do the ncert textbook laws motion exercise numericals