Tender Heart High School, sec. 33 B, Chd.

Class: 9th Date: 22.7.2024

Subject: Maths Teacher: Ms. Reena

Revision

Chapter - 1 Rational and Irrational Numbers

Q1 Simplify by rationalizing the denominator :-

(i) $\frac{3}{\sqrt{5}+\sqrt{3}}$ (ii) $\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$

Q2 If $x = 2+\sqrt{3}$, find the value of $x^2+\frac{1}{x^2}$

[Ans. 14]

Q3 Prove that $\sqrt{5}$ is irrational number

Q4 Represent following on number line :-

(i) $\sqrt{3}$ (ii) $\frac{-5}{3}$ (iii) $\frac{3}{4}$ (iv) $\sqrt{7}$

Q5 Find three rational numbers between $\frac{1}{5}$ and $\frac{1}{2}$

Q6 Rationalize the denominator of $\frac{1}{\sqrt{3}+\sqrt{2}-1}$

Q7 Find the value of 'a' and 'b'

(i) $\frac{3}{\sqrt{3}-\sqrt{2}} = a\sqrt{3}-b\sqrt{2}$

(ii) $\frac{2+\sqrt{3}}{2-\sqrt{3}} = a+b\sqrt{3}$

Class 9th Maths Ms. Reena

Chapter-2 Compound Interest

Q1 Calculate the compound interest due in $2\frac{1}{2}$ years on ₹6000 at 10 percent compounded annually. [Ans. 1623]

Q2 Calculate the difference between the compound interest and the simple interest on ₹4000 at 8 per cent per annum and in 2 years. [Ans. 25.60]

Q3 Find the sum invested at 10% compounded annually, on which the interest for the first year plus the interest for the third year amount to ₹1768 [Ans. 8000]

Q4 Calculate the amount and the compound interest on ₹12000 in 3 years when the rates of interest for successive year are 8%, 10% and 15% resp. [Ans. 4394.40]

Q5 At what rate percent per annum C.I. will ₹2000 amount to ₹2315.25 in 3 years? [Ans. 5%]

Q6 The population of a town increases by 20% every year. If its present population is 2,16,000, find

(i) its population after 2 yrs.

(ii) Its population 2 years ago.

[Ans. 311040
150000]

Class 9th Maths — Ms. Reena

Chapter – 3 Expansions

Q1 If $a+b=9$ and $ab=-22$, find
(i) $a-b$ (ii) a^2-b^2

Q2 Given $a^2+\frac{1}{a^2}=7$ and $a\neq 0$ find
(i) $a+\frac{1}{a}$ (ii) $a-\frac{1}{a}$ (iii) $a^2-\frac{1}{a^2}$

Q3 If $a^2+b^2+c^2=29$ and $a+b+c=9$, find $ab+bc+ca$

Q4 If $a+b=3$ and $ab=2$, find the values of (i) a^2+b^2 (ii) $a-b$
(iii) a^2-b^2 (iv) a^3+b^3

Q5 If $x^4+\frac{1}{x^4}=194$, find the values of
(i) $x^2+\frac{1}{x^2}$ (ii) $x+\frac{1}{x}$ (iii) $x^3+\frac{1}{x^3}$

Q6 If $x-\frac{2}{x}=3$, find the value of $x^3-\frac{8}{x^3}$

Q7 If $a=5+2\sqrt{6}$ and $b=\frac{1}{a}$,
then find the values of
(i) a^2+b^2 (ii) a^3+b^3

Q8 Find the expansions of
(i) $(2a+3b)^3$ (ii) $\left(3x-\frac{4}{y}\right)^3$
(iii) $(x-2y+5z)^2$

Class 9th Maths — Ms. Reena

Chapter - 8 Indices

Q1 Simplify the following:-

(i) $(2a^{-3}b^{2})^{3}$ (ii) $\dfrac{a^{-1}+b^{-1}}{(ab)^{-1}}$

(iii) $5^{0} \times 4^{-1} \times 8^{\frac{1}{3}}$ (iv) $\left(\dfrac{27}{8}\right)^{\frac{2}{3}} - \left(\dfrac{1}{4}\right)^{-2} + 6^{0}$

(v) $\dfrac{5^{n+3} - 6 \times 5^{n+1}}{9 \times 5^{n} - 2^{2} \times 5^{n}}$

(vi) $(3^{2})^{0} + 3^{-4} \times 3^{6} + \left(\dfrac{1}{3}\right)^{-2}$

Q2 Prove the following:-

(i) $(a+b)^{-1}(a^{-1}+b^{-1}) = \dfrac{1}{ab}$

(ii) $\dfrac{x+y+z}{x^{-1}y^{-1} + y^{-1}z^{-1} + z^{-1}x^{-1}} = xyz$

Q3 If $3^{x+1} = 9^{x-2}$, find the value of 2^{1+x}

Q4 Solve for x

(i) $2^{3}(5^{0} + 3^{2x}) = 8\dfrac{8}{27}$

(ii) $5^{2x-1} = 25^{x-1} + 100$