Department of Education, Sabaragamuwa Province – Weekly School

Subject - Matheatics

Week - 29

Grade 10

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Second term revision exercise - 1

01. Simplify the following algebraic fractions.

i. $\frac{m}{5}+\frac{m}{5}$ ii. $\frac{3}{y}+\frac{2}{y}$ iii. $\frac{3}{5b}-\frac{2}{5b}$

iv. $\frac{5}{2y}-\frac{1}{3y}+\frac{2}{5y}$ v. $\frac{5}{2b}-\frac{3}{2b}+\frac{7}{2b}$ vi. $\frac{3x}{4}+\frac{2x}{3}-\frac{5x}{6}$

vii. $\frac{2}{p-3}+\frac{3}{p-2}$ viii. $\frac{3}{y+2}-\frac{2}{y-2}$ ix. $\frac{8}{5m-2}-\frac{3}{3m-4}$

x. $\frac{7}{2(a-3)}+\frac{5}{3(a-1)}$ xi. $\frac{q+2}{q^2-4}+\frac{3}{q+2}$ xii. $\frac{2}{3(a-2)}-\frac{3}{a-1}-\frac{4}{1-a}$

xiii. $\frac{4}{a+2}-\frac{3}{a-2}+\frac{5}{a^2-4}$ xiv. $\frac{3}{y+3}+\frac{4}{y^2+5y+6}$ xv. $\frac{2}{n+2}+\frac{3}{n^2+6n+8}$

02. Find the percentages and quantity.

i. Rs. 25 as a percentage of Rs.100 ii. 50 cents as a percentage one rupee

iii. 20% of Rs. 1000 iv. 25% of 20 *l*

03. The assessed annual value of a shop within administrative domain of a certain urban council is Rs.60 000. If it is charged 10% as rates, calculate the rates that has to be paid for a quarter.

04. If Rs. 2500 has to be paid as quarterly rates for a house of assessed annual value Rs. 100 000, which lies within the limits of a certain urban council, calculate the percentage that the urban council charges as rates.

05. The value of a motor bicycle which is being imported is Rs.150 000.If the custom duty that has to be pay is 10% of the value of the item, calculate the amount that has to be paid as duty.

06. If Rs.20 000 was charged as custom duty when ready-made garments worth Rs.500 000 was exported, find the percentage that was charged as custom duty.

07. Annual income of the certain individual is Rs.2 000 000. Calculate the income tax that has to pay if initial Rs.500 000 is tax free and for each next parts of Rs.500 000 being charged 4%, 8% and 12% respectively.

08. The monthly telephone charges of a certain house are Rs.2500. A VAT of 15% is added to charges. Find the total value of bill with the VAT.

09. Solve the following equations.

i. $3(a-4)=21$ ii. $7(6p-5)=-14$ iii. $\frac{x}{2}+\frac{x}{2}=4$

iv. $\frac{2a}{3}+\frac{a}{3}=4$ v. $\frac{3(x-1)}{2}+2=5$ vi. $\frac{3(q+3)}{2}+4=10$

10. Solve each of the following pair of simultaneous equations.

i. $\begin{matrix} a+b=5 \\ a-b=1 \end{matrix}$ ii. $\begin{matrix} x+2y=7 \\ 2x-2y=2 \end{matrix}$ iii. $\begin{matrix} p+q=8 \\ 2p+q=2 \end{matrix}$

iv. $\begin{matrix} a+2b=13 \\ 2a+5b=31 \end{matrix}$ v. $\begin{matrix} 2x-y=2 \\ 3x+2y=17 \end{matrix}$ vi. $\begin{matrix} 3p+2q=11 \\ 5p+3q=17 \end{matrix}$

11. Solve each of the following quadratic equations using factors.

i. $n^2+8n+15=0$ ii. $m^2-7m+12=0$ iii. $2a^2+35=19a$

12. Vimala and Kamala have certain amount of money. When you add Rs.55 to the sum of money they have , the total amount of money is equal to Rs.200. Kamala has the amount money of less than Rs.95 what Vimala has. Find the amount Kamala and Vimal have seperstely.

13. Two baby t-shirts and a baby skirt cost Rs. 1060. A baby t-shirt and three baby skirts cost Rs. 1555. Taking the price of a baby t- shirt as Rs. x and the price of baby skirt as Rs. y, construct a pair of simultaneous equations and by solving the pair find the price of a t-shirt and the price of a skirt.

14. The product of number x and the number that is 12 more than x is 189. Find the two numbers.

15. The height of a solid cylinder is 4 cm more than its radius. If the area of curved surface is 484 cm^2, find the radius of cylinder.