JAFFNA HINDU COLLEGE

Risk Holiday Self - Education Worksheet (2) – 2020

Grade - 10 | Mathematics

Name/Index No : …… Mr.S.Mayooran, NDT(Maths)

INSTRUCTIONS :

- Answer all the questions.
- Answer the questions on answer sheets only.
- Read the respective lesson units thoroughly and comprehend before you attempt answering the questions.
- File the completed answer and hand over to the class teacher when the school reopens.

Algebraic fractions

Example :

1. $\frac{a}{5}+\frac{2a}{5}=\frac{3a}{5}$
2. $\frac{5x}{7}-\frac{x}{7}=\frac{4x}{7}$
3. $\frac{3a}{11}+\frac{5a}{11}-\frac{4a}{11}=\frac{4a}{11}$
4. $\frac{a+5}{3}+\frac{a+2}{8}=\frac{a+5+a+2}{8}=\frac{2a+7}{8}$
5. $\frac{2x-1}{6}+\frac{x+4}{6}=\frac{2x-1+x+4}{6}=\frac{3x+3}{6}=\frac{3(x+1)}{6}=\frac{x+1}{2}$
6. $\frac{a-1}{4}-\frac{a-3}{4}=\frac{(a-1)-(a-3)}{4}=\frac{a-1-a+3}{4}=\frac{2}{4}=\frac{1}{2}$
7. $\frac{7}{x+5}+\frac{x+1}{x+5}=\frac{7+x+1}{x+5}=\frac{x+8}{x+5}$
8. $\frac{x}{3}+\frac{x}{4}=\frac{4x}{12}+\frac{3x}{12}=\frac{7x}{12}$
9. $\frac{a}{2}-\frac{a}{5}=\frac{5a}{12}-\frac{2a}{10}=\frac{3a}{10}$
10. $\frac{2x+1}{4}+\frac{x+2}{5}=\frac{5(2x+1)+4(x+2)}{20}=\frac{10x+5+4x+8}{20}=\frac{14x+13}{20}$
11. $\frac{5m-2}{6}-\frac{m+1}{15}=\frac{5(5m-2)-2(m+1)}{30}=\frac{25m-10-2m-2}{30}=\frac{23m-12}{30}$
12. $\frac{4}{x-3}-\frac{1}{3-x}=\frac{4}{x-3}+\frac{1}{x-3}=\frac{5}{x-3}$

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Excercises :

01. $\frac{m}{3}+\frac{m}{3}+\frac{m}{3}$

02. $\frac{2x}{5}+\frac{x}{5}+\frac{x}{5}$

03. $\frac{8a}{11}-\frac{5a}{11}$

04. $\frac{7x}{9}+\frac{4x}{9}-\frac{5x}{9}$

05. $\frac{2a+7}{13}+\frac{3a-3}{13}$

06. $\frac{5m-1}{15}-\frac{m+3}{15}$

07. $\frac{5}{x}+\frac{12}{x}$

08. $\frac{15}{a}-\frac{3}{a}$

09. $\frac{6}{a+11}+\frac{7}{11+a}$

10. $\frac{8}{3m+4}+\frac{m+5}{4+3m}$

11. $\frac{a}{5}+\frac{2a}{3}$

12. $\frac{5m}{6}-\frac{m}{2}$

13. $\frac{a-3}{4}+\frac{a+1}{12}$

14. $\frac{3x-1}{4}-\frac{x+1}{5}$

15. $\frac{m+1}{3}+\frac{m-1}{4}-\frac{m+5}{12}$

16. $\frac{2-a}{2}-\frac{3+2a}{9}$

17. $\frac{2x+3}{7x+1}$

Example :

01. $\frac{2}{a}+\frac{1}{3a}=\frac{6}{3a}+\frac{1}{3a}=\frac{7}{3a}$

02. $\frac{5}{x^2}-\frac{1}{x}=\frac{5}{x^2}-\frac{x}{x^2}=\frac{5-x}{x^2}$

03. $\frac{17}{m+4}+\frac{2}{m}=\frac{7m}{m(m+4)}+\frac{2(m+4)}{m(m+4)}=\frac{7m+2m+8}{m(m+4)}=\frac{9m+8}{m(m+4)}$

04. $\frac{3}{2x-1}-\frac{1}{x}=\frac{3x}{x(2x-1)}-\frac{2x-1}{x(2x-1)}=\frac{3x-2x+1}{x(2x-1)}=\frac{x+1}{x(2x-1)}$

05. $7-\frac{1}{x+1}=\frac{7(x+1)}{x+1}-\frac{1}{x+1}=\frac{7x+7-1}{x+1}=\frac{7x+6}{x+1}$

06. $\frac{5}{a^2-9}+\frac{1}{a^2+5a+6}=\frac{5}{(a+3)(a-3)}+\frac{1}{(a+3)(a+2)}=\frac{5(a+2)+(a-3)}{(a+3)(a-3)(a+2)}$

$=\frac{5a+10+a-3}{(a+3)(a-3)(a+2)}=\frac{6a+7}{(a+3)(a+3)(a+2)}$

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Excercises :

Simplify

01. $\frac{5}{2x}+\frac{2}{3x}$

02. $\frac{4}{5a}-\frac{1}{2a}$

03. $\frac{2}{m}+\frac{3}{3m}+\frac{4}{3m}$

04. $\frac{3}{4a^2}-\frac{1}{2a^2}$

05. $\frac{3}{x-2}+\frac{2}{x}$

06. $\frac{5}{2m+3}-\frac{2}{m}$

07. $\frac{1}{a+3}-\frac{1}{a-3}$

08. $\frac{3}{2a+4}+\frac{a}{a^2-4}$

09. $\frac{4}{x^2-25}+\frac{7}{x^2+2x-15}$

10. $\frac{a}{a^2-a-12}+\frac{3}{a^2-9a+20}$

11. $\frac{14}{x^2-5x+6}-\frac{5}{3x-9}$

12. $\frac{3}{4x-28}-\frac{1}{x(x-7)}$

13. $\frac{5}{m^2-36}+\frac{1}{12-2m}$

14. $\frac{2t}{t^2-4t-3}-\frac{t}{t^2+4t-5}$

15. $\frac{x-1}{x^2-2x+1}+\frac{x+2}{x^2+4x+4}$

Percentage

01. Express as Percentage.
    1. $\frac{3}{4}=\frac{3}{4}\times 100\%=\frac{300}{4}\%=75$
    2. $2\frac{1}{2}=\frac{5}{2}\times 100\%=\frac{500}{2}\%=250\%$
    3. &50 ,y; &50 rjk; $=\frac{8}{50}\times 100=16\%$
    4. &20 ,y; 50 rjk; $=\frac{50}{2000}\times 100=2.5\%$

02. Evauate.
    1. 5m ,d; $10\%=5\times\frac{10}{100}=\frac{50}{100}=0.5m$
    2. $1l$,d; $7.5\%=1000\times\frac{7.5}{100}=75ml$

03. Convert to Frection
    1. $8\%=\frac{8}{100}=\frac{2}{25}$
    2. $3.1\%=\frac{3.1}{100}=\frac{31}{1000}$
    3. $325\%=\frac{325}{100}=\frac{13}{4}=3\frac{1}{4}$

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Excercise :

01. Convert to percentage?

3. $\frac{7}{10}$

4. $\frac{12}{25}$

3. $3\frac{4}{5}$

4. 0.42

5. 0.008
6. $2m$,y; $10cm$
7. $1l$,y; $150ml$
8. &40 ,y; 25 rjk;
9. $2.5kg$,y; $100g$

Custom Duty

01. A television of worth Rs.30,000 imported with 25% duty.
    a. Find the amount of custom duty charged.
    $30{,}000 \times \frac{25}{100}$ =Rs.7,500
    b. Find the value of television after paying duty.
    30,000 + 7,500
    =Rs.37500

    or

    $30{,}000 \times \frac{125}{100}$ = Rs.37>500

02. A Clock of worth Rs.4000 imported from japan. Rs.240 Charged as duty. Calculate the percentage of duty.

$$\frac{240}{4000} \times 100\% = 6\%$$

03. An Electronic equipment imported with 40% custom duty. It the value with duty is Rs.49,000, find the price before paying duty?
Rs $49{,}000 \times \frac{100}{140}$ = Rs.35,000

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Excercise :

01. A Retrigrator of worth Rs.45,000 imported with 20% duty.
    a. Find the amount of duty.
    b. Find the price after paying duty.

02. An article of worth Rs.52,000 imported from a foreign country. Find percentage of duty, If the price with duty is Rs.70,200.

03. The ratio between the prices of before paying duty and after paying duty is 4:5.
    a. If the amount of duty is Rs.125,000, Find the price without duty.
    b. Calculate the percentage of duty.

Rates

A certain percentage of amount charged from the assessed annual value of a property is known as rates.

01. 8% Rates charged for a house of asscssed annual value Rs.25,000.
    a. Calculate the annual rates.
    Rs. $25000 \times \frac{8}{100} =$ Rs.2000

    b. Calculate the rates for a quarter.
    $\frac{2000}{4} =$ Rs.500

02. The asscssed annual value of a house is Rs.12,000. Rs.180 charged as rates for a quarter.
    a. Find the annual rates.
    $4 \times$ &.180 = Rs.720

    b. Calculate the percentage of rates.
    $\frac{720}{12000} \times 100\% = 6\%$

03. An Urban council charged 4% as rates. A houses owner paid Rs.150 for a quarter, find the asscssed annual value of the house.
    Rs.$150 \times 4 \times \frac{100}{4} =$ Rs.15,000

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Excercise :

01. An Urban Council charged 5% rates for house of aassessed annual value Rs.70,000
    a. Find the annual rates.
    b. Calculate the rates for a quarter.

02. The asscssed annual value of a shop is Rs.32000. Shop owner paid Rs.560 as Rates for a quarter. Calculate the percentage of annual rates.

03. 6% of assessed annual value paid for rates. Calculate the assessed annual value, If the annual rates is Rs.2700.

04. Rs.$\frac{x}{50}$ paid as rates for a quarter to a house of asscssed annual values Rs.X. Calculate the percentage of annual rates charged.

05. Ravi routed a house of assessed annual value Rs.X for a year. Municipal Council charged 8% rates from house owner kumar. The annual rates is 6% of annual rent. Kumar paid the rates from annual rent and left with Rs.52,640 after the one year.
    a. Calculate the annual rant.
    b. Find the amount of annual rates.
    c. Find the assessed annual value X.

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