Riviera International Academy

Assignment-2077

(Bhadra 09, 2077, Tuesday)

Class: Ten

Subject- Mathematics

Source: Photo of exercise are given below.
Work: complete all exercise from the given pages.
Do your work neatly

2. Simplify.

a) $\frac{2^n \times 3 - 2^n}{2^{n+2} - 2^{n+1}}$ b) $\frac{5^{n+1} - 5^n}{5^{n+1} + 5^n}$ c) $\frac{4^n + 4^{n+1}}{4^{n+2} - 4^n}$

d) $\frac{6^{n+2} - 6^n}{6^{n+1} + 6^n}$ e) $\frac{2^{n+3} - 2^n}{5.2^n}$ f) $\frac{5^{n+2} - 2.5^n}{23.5^n}$

g) $\frac{5^{n+2} - 10 \times 5^n}{3 \times 5^n}$ h) $\frac{3^{2n+2} - 3^{2n+1}}{6 \times 27^n}$ i) $\frac{13^{2n+1} + 5 \times 169^n}{9 \times 169^n}$

j) $\frac{11^{2n+1} - 6 \times 121^n}{5 \times 121^n}$ k) $\frac{7^{n+1} + 9 \times 7^n}{7^{n+2} - 45 \times 7^n}$ l) $\frac{9^{n+1} + 10 \times 9^n}{9^{n+1} \times 11 - 8 \times 9^n}$

m) $\frac{11^{n+2} - 55.11^{n-1}}{11^n \times 116}$ n) $\frac{27^{2n-1}(243)^{-\frac{4n}{5}}}{9^{n+1}3^{3n-5}}$ o) $\frac{(243)^{\frac{2n}{5}}.3^{2n+1}}{9^{n+1} \times 3^{2n-n}}$

3. Simplify.

a) $(64x^3 \div 27a^{-3})^{\frac{2}{3}}$ b) $\sqrt[3]{a^3} \times \sqrt[n]{a^{n-1}}$ c) $(125a^3 \div 27b^{-3})^{-\frac{2}{3}}$

d) $(81a^4 \div 16b^{-4})^{\frac{3}{4}}$ e) $\sqrt{a^6b^{-2}c^4} \div \sqrt[3]{a^4b^{-4}c^3}$ f) $\sqrt[3]{27a^{12}b^3} \div \sqrt[4]{16a^{16}b^4}$

g) $\sqrt[3]{9x^{-2}y^2} \times \sqrt[3]{3x^5y^{-1}}$ h) $\sqrt[3]{3x^7y^{11}z^{-1}} \times \sqrt[3]{72x^{-1}yz^4}$ i) $\sqrt[3]{(x+y)^{-4}}.(x+y)^{\frac{2}{3}}$

j) $\sqrt[3]{(a+b)^{-7}}.(a+b)^{\frac{1}{3}}$

4. Simplify.

a) $x^{b-c} \times x^{c-a} \times x^{a-b}$ b) $\left(a^{x+y}\right)^{x-y} \times \left(a^{y+z}\right)^{y-z} \times \left(a^{z+x}\right)^{z+x}$

c) $\frac{x^{a+b} \times x^{a-b} \times x^{c-2a}}{x^{c-a}}$ d) $\left(\frac{y^a}{z^b}\right)^b \cdot \left(\frac{z^b}{x^b}\right)^a \cdot \left(\frac{x^a}{y^a}\right)^b$

e) $\frac{1}{1+x^{a-b}} + \frac{1}{1+x^{b-a}}$ f) $\frac{1}{1-a^{x-y}} + \frac{1}{1-a^{y-x}}$

g) $\frac{x^{-1}y^{-1} + y^{-1}z^{-1} + z^{-1}x^{-1}}{x+y+z}$ h) $\frac{a^2+b^2+c^2}{a^{-2}b^{-2} + b^{-2}c^{-2} + c^{-2}a^{-2}}$

Creative section - A

5. Simplify.

a) $\left(\frac{x^{a+b}}{x^c}\right)^{a-b} \times \left(\frac{x^{c+a}}{x^b}\right)^{c-a} \times \left(\frac{x^{b+c}}{x^a}\right)^{b-c}$ b) $\left(\frac{x^a}{x^b}\right)^{a-b} \times \left(\frac{x^b}{x^c}\right)^{b-c} \times \left(\frac{x^c}{x^a}\right)^{c+1}$

c) $\left(\frac{x^l}{x^m}\right)^{l^2+lm+m^2} \times \left(\frac{x^m}{x^n}\right)^{m^2+mn+n^2} \times \left(\frac{x^n}{x^l}\right)^{n^2+nl+l^2}$

d) $(x^a \div x^b)^{a^2+ab+b^2} \times (x^b \div x^c)^{b^2+bc+c^2} \times (x^c \div x^a)^{c^2-ca+a^2}$

e) $\frac{(a^{x+y})^{x}\,(a^{y+z})^{y}\,(a^{z+x})^{z}}{(a^{x}.a^{y}.a^{z})^{x+y+z}}$

f) $\left(\frac{x^{a}}{x^{-b}}\right)^{a-b} \times \left(\frac{x^{b}}{x^{-c}}\right)^{b-c} \times \left(\frac{x^{c}}{x^{-a}}\right)^{c-a}$

g) $\left(\frac{x^{a}}{x^{b}}\right)^{a+b-c} \times \left(\frac{x^{b}}{x^{c}}\right)^{b+c-a} \times \left(\frac{x^{c}}{x^{a}}\right)^{c+a-b}$

h) $\left(\frac{x^{a}+1}{x^{-a}+1}\right)^{a-a} \times \left(\frac{x^{a}+1}{x^{-a}+1}\right)^{a-a} \times \left(\frac{x^{a}+1}{x^{-a}+1}\right)^{a-a}$

i) $\left(\frac{x^{l}+m}{x^{l}-m}\right)^{m-l} \times \left(\frac{x^{m}+l}{x^{m}-l}\right)^{l-m} \times \left(\frac{x^{n}+l}{x^{n}-l}\right)^{n-n}$

j) $\left(\frac{x^{a}}{x.x^{a}}\right)^{a-a} \times \left(\frac{x^{a}}{x.x^{a}}\right)^{a-a} \times \left(\frac{x^{a}}{x.x^{a}}\right)^{a-a}$

k) $\left(\frac{x^{a}}{x^{c}}\right)^{\frac{1}{a-c}} \times \left(\frac{x^{c}}{x^{b}}\right)^{\frac{1}{c-b}} \times \left(\frac{x^{b}}{x^{a}}\right)^{\frac{1}{b-a}}$

l) $\left(\frac{x^{\frac{1}{p}}}{x^{\frac{1}{q}}}\right)^{\frac{1}{pq}} \times \left(\frac{x^{\frac{1}{q}}}{x^{\frac{1}{r}}}\right)^{\frac{1}{qr}} \times \left(\frac{x^{\frac{1}{r}}}{x^{\frac{1}{p}}}\right)^{\frac{1}{rp}}$

m) $\left(a^{\frac{1}{x-y}}\right)^{\frac{1}{x-z}} \cdot \left(a^{\frac{1}{y-z}}\right)^{\frac{1}{y-x}} \cdot \left(a^{\frac{1}{z-x}}\right)^{\frac{1}{z-y}}$

n) $\left(x^{a^2-a^3}\right)^{\frac{1}{a+b+c}} \times \left(x^{a^3-b^3}\right)^{\frac{1}{a+b+c}} \times \left(x^{b^3-a^3}\right)^{\frac{1}{b+c+a}}$

o) $\left[\left(a^{x}.a^{y}\right)^{x-y}\left(\frac{a^{x}}{a^{y}}\right)^{x+y}\right] \times \left(\frac{a^{x}}{a^{z}}\right)^{x+z}$

p) $\frac{p+(pq^2)^{\frac{1}{3}}+(p^2q)^{\frac{1}{3}}}{p-q} \times \left(1-\frac{q^{\frac{1}{3}}}{p^{\frac{1}{3}}}\right)$

6. Simplify.

a) $\sqrt[a+b]{x^{a^2-b^2}} \times \sqrt[b+c]{x^{b^2-c^2}} \times \sqrt[c+a]{x^{c^2-a^2}}$

b) $\sqrt[m]{\frac{a^x}{a^y}} \times \sqrt[n]{\frac{a^y}{a^z}} \times \sqrt[p]{\frac{a^z}{a^x}}$

c) $\sqrt[xy]{\frac{a^{\frac{y}{z}}}{a^{\frac{z}{y}}}} \times \sqrt[yz]{\frac{a^{\frac{z}{x}}}{a^{\frac{x}{z}}}} \times \sqrt[zx]{\frac{a^{\frac{x}{y}}}{a^{\frac{y}{x}}}}$

d) $\sqrt[\frac{1}{ab}]{\frac{x^{\frac{1}{a}}}{x^{\frac{1}{b}}}} \times \sqrt[\frac{1}{bc}]{\frac{x^{\frac{1}{b}}}{x^{\frac{1}{c}}}} \times \sqrt[\frac{1}{ca}]{\frac{x^{\frac{1}{c}}}{x^{\frac{1}{a}}}}$

Creative section - B

7. Simplify.

a) $\frac{\left(a+\frac{1}{b}\right)^{x} \times \left(\frac{1}{b}-a\right)^{y}}{\left(b+\frac{1}{a}\right)^{x} \times \left(\frac{1}{a}-b\right)^{y}}$

b) $\frac{\left(\frac{1}{y}-x\right)^{a} \times \left(x+\frac{1}{y}\right)^{b}}{\left(y+\frac{1}{x}\right)^{b} \times \left(\frac{1}{x}-y\right)^{a}}$

c) $\frac{\left(a^2-\frac{1}{b^2}\right)^{a} \times \left(a-\frac{1}{b}\right)^{b-a}}{\left(b^2-\frac{1}{a^2}\right)^{b} \times \left(b+\frac{1}{a}\right)^{a-b}}$

d) $\frac{\left(1+\frac{x}{y}\right)^{\frac{x}{x-y}} \times \left(1-\frac{y}{x}\right)^{\frac{y}{x-y}}}{\left(\frac{y}{x}+1\right)^{\frac{x}{x-y}} \times \left(\frac{x}{y}-1\right)^{\frac{y}{x-y}}}$

e) $\frac{\left(y+\frac{1}{x}\right)^{x+y} \times \left(x-\frac{1}{y}\right)^{x+y}}{\left(x^2-\frac{1}{y^2}\right)^{x} \times \left(y^2-\frac{1}{x^2}\right)^{y}}$

Subject- Computer

1) **Answer the following questions.**
   a) What is Network protocol? List any four Network protocols.
   b) What is computer network? Write any two advantages and disadvantages of computer network.
   c) Define the terms: i) Uploading ii) Downloading
   d) What is hardware security? List some hardware security measures.
   e) What is computer virus? List any two symptoms of computer virus.
2) **Write the full form of:**
   a) UTP b) VPN c) POP d) CCTV
3) **Convert the numbers as instructed.**
   a) $(21C)_{16} = (?)_2$ b) $(123)_8 = (?)_{16}$
4) **Perform the binary calculation.**
   a) 10100 – 1011 b) 10101 ÷ 11

Subject- HPE

1. Answer question A (very short answer questions) and question B (short answer questions) of Unit 2, page 67. (Readmore Publication)

.विषय – नेपाली

"जननी र जन्मभू म स्वर्गभन्दा पनि महान् छन्। " भन्ने भनाइ व्यख्या गर्नुहोस्।

The End.