

Riviera International Academy

Assignment-2077

(Ashwin 06, 2077, Tuesday)

Class: Eight

Subject- Mathematics

Source: Photos of exercise are given below.

Work: Complete all the work from given pages.

Do your work neatly

Laws of Indices

e) $\frac{x^{a+b+1} \times x^{a-b+2}}{x^{2a+2}}$ f) $\frac{x^{p+q+1} \times x^{q+r+1} \times x^{r+s+1}}{x^2}$

g) $\frac{x^{a+b} \times x^{b+c} \times x^{c+a}}{x^{2a} \times x^{2b} \times x^{2c}}$ h) $\frac{x^{a+b}}{x^{a+b}} \times \frac{x^{c+d}}{x^{c+d}}$

i) $\left(\frac{x^a}{x^b}\right)^{p+q} \times \left(\frac{x^b}{x^c}\right)^{q+r} \times \left(\frac{x^c}{x^a}\right)^{r+s}$ j) $\left(\frac{x^a}{x^b}\right)^{p+q} \times \left(\frac{x^b}{x^c}\right)^{q+r} \times \left(\frac{x^c}{x^a}\right)^{r+s}$

k) $\frac{(a^2)^{p+q} \times (a^2)^{q+r} \times (a^2)^{r+s}}{(a^p \cdot a^q \cdot a^r)^4}$ l) $\sqrt{x^{a-b}} \times \sqrt{x^{b-c}} \times \sqrt{x^{c-a}}$

11. Let's simplify.

a) $\frac{2^{x+1} + 2^x}{3 \times 2^x}$ b) $\frac{3^{y+1} + 3^y}{2 \times 3^y}$ c) $\frac{5^{x+2} - 5^x}{6 \times 5^x}$ d) $\frac{6^{x+2} - 6^x}{7 \times 6^x}$

e) $\frac{2^{x+4} - 2^x}{5 \times 2^x}$ f) $\frac{6^{n+2} - 6^n}{6^{n+1} + 6^n}$ g) $\frac{11^{p+2} - 11^p}{11^{p+1} + 11^p}$ h) $\frac{2^{x+3} + 2^{x+1}}{2^{x+2} - 2^{x+1}}$

12. If $a = 1$, $b = 2$ and $c = -3$, find the value of

a) $4a^3b^2$ b) $3b^2c^2$ c) $a^b + b^c$ d) $a^c + c^b - bc$

e) $a^b b^c c^a$ f) $a^{b+c} b^{c+a} c^{a+b}$ g) $a^{b+c} b^{c+a} c^{a+b}$

13. a) If $x = 2$, $y = 3$, $m = 1$ and $n = 2$, find the value of $\frac{x^{m+n}}{y^{2m-n}}$.

b) If $x = 2$, $y = 4$, $m = -1$ and $n = 3$, find the value of $\frac{x^{m+n} \times y^{n-m}}{x^{m-n} \times y^{m+n}}$

It's your time - Project work

14. a) Let's take any base number and index number greater than 1 and less than 6. Then verify the following laws of indices.

(i) product law (ii) Quotient law (iii) Power law

(iv) Law of negative index (v) Root law of indices (vi) Law of zero index

Example:

$2^3 \times 2^2 = (2 \times 2 \times 2) \times (2 \times 2) = 2^5 = 2^{3+2}$

So, $a^m \times a^n = a^{m+n}$

$\frac{3^5}{3^3} = \frac{3 \times 3 \times 3 \times 3 \times 3}{3 \times 3 \times 3} = 3 \times 3 = 3^2 = 3^{5-3}$ So, $\frac{a^m}{a^n} = a^{m-n}$

$(2^2)^3 = 2^2 \times 2^2 \times 2^2 = 2^{2+2+2} = 2^6 = 2^{2 \times 3}$ So, $(a^m)^n = a^{m \times n}$

Subject- HPE

Draw well labelled diagram of human brain and human heart.

Subject-OBT

Ex.2 Write Short Notes.

Subject- Science

1. Write the two differences between mechanical advantage (MA) and velocity ratio (VR).
2. A simple machine has VR 4. What does it mean?
3. Mention the three methods by which a simple machine works.
4. What is input work of simple machine? Why output work is always smaller than input work?

The End.