Subject: Maths Class: 8 Topic: Exponents and Powers

Watch video #6 and solve the following exercise:

EXERCISE 2.2

Use Cordova Smart Class Software on the smart board in class to do Exercise.

1. Simplify :

(i) $3^{-4} \div 3^{-5}$ (ii) $29^3 \div 29^2$ (iii) $\left(\frac{11}{9}\right)^{-7} \times \left(\frac{9}{11}\right)^{-8}$

2. Evaluate :

(i) $(2^{-1} \times 4^{-1}) \div 2^{-2}$ (ii) $(3^{-5} \div 3^{-7}) \div 3^{-2}$ (iii) $(5^{-1} + 7^0) \times 5^3$

(iv) $(2^{-1} \times 3^{-1})^{-1} \div 2$ (v) $\left(-\frac{1}{3}\right)^{-4} \div \left(-\frac{1}{3}\right)^{-2}$

3. Find the value of m, if :

(i) $\left(\frac{3}{7}\right)^{-6} \times \left(\frac{3}{7}\right)^{10} = \left(\frac{3}{7}\right)^{2m}$ (ii) $\left(\frac{2}{9}\right)^4 \times \left(\frac{2}{9}\right)^{-7} = \left(\frac{2}{9}\right)^{2m+1}$ (iii) $\left(\frac{3}{8}\right)^{2m} \times \left(\frac{3}{8}\right)^6 \times \frac{3}{8} = \left(\frac{3}{8}\right)^{13}$

4. Simplify :

(i) $(5^{-10} \div 5^{-7}) \div 5^{-4}$ (ii) $(3^8 \div 3^5) \times 3^{-3}$ (iii) $(-7)^4 \times \left(\frac{3}{7}\right)^4 \div \frac{1}{3^{-5}}$

5. Evaluate :

(i) $\left[\left(\frac{1}{2}\right)^{-3} - \left(\frac{1}{3}\right)^{-3}\right] \div \left(\frac{1}{4}\right)^{-3}$ (ii) $(2^{-1} \times 3^{-1})^{-1} \times 4^{-1}$ (iii) $(3^{-1} \times 5^{-1}) \div 6^{-1}$

6. Find the multiplicative inverse of $\left(\frac{3}{5}\right)^{-3} \div \left(\frac{5}{3}\right)^5$.

7. Solve for x :

(i) $\frac{7^3}{7^{x-2}} = 7^7$ (ii) $9^{2x} \div 9^{-5} = 9^{13}$

8. Simplify :

(i) $\frac{15x^5y^{-2}z^4}{5x^3y^{-3}z^2}$ (ii) $\frac{42x^3y^2z^4}{6xy^2z^3}$ (iii) $\frac{3x^{-2}y^{-3}z}{9x^{-2}y^{-4}}$ (iv) $\frac{42x^3y^2z^4}{16x^2y^3z^8}$

9. Find the value of p, if $(-2)^{p+1} \cdot (-2)^p = -8$.

10. If $\frac{m}{n} = \left(\frac{3}{4}\right)^5 \div \left(\frac{3}{4}\right)^3$, find $\left(\frac{n}{m}\right)^{-2}$.

11. Simplify :

(i) $(-4)^{-2} \times \left(-\frac{3}{2}\right)^{-2}$ (ii) $\frac{2^{-3} \times 5^{-3} \times 10^2 \times 25}{5^4 \times 2^{-5}}$