19) Express each of the following numbers using exponential notation
a) 512 b) 343 c) 3125

20) Evaluate : (a) $\left\{\left(\frac{-2}{3}\right)^2\right\}^{-2}$ (b) $\left(\frac{-2}{3}\right)^7 \div \left(\frac{-2}{3}\right)^4$
(c) $[(5^{-1}\times 3^{-1})^{-1} \div 6^{-1}]$

21) Express each of the following as a rational number.
(a) $(5^{-1}-7^{-1})^{-1}$ (b) $(-3)^{-1} \times \left(\frac{1}{3}\right)^{-1}$

22) Find the value of (i) $(2^0+3^{-1})\times 3^2$

ii) $\frac{2^8 \times a^5}{4^3 \times a^3}$ iii) $\frac{3\times 7^2\times 11^8}{21\times 11^3}$ (iv) $\frac{25\times 5^2\times t^8}{10^3\times t^4}$

(v) $\frac{10\times 5^{n+1}+25\times 5^n}{3\times 5^{n+2}+10\times 5^{n+1}}$ (vi) $\left(2^{-1}\times 3^{-1}\right) \div 2^{-3}$

23) Find the value of x for which
$\left(\frac{5}{3}\right)^{-4} \times \left(\frac{5}{3}\right)^{-5} = \left(\frac{5}{3}\right)^{2x}$

24) (a) If $5^{2x+1} \div 25 = 125$, find the value of x

(b) If $2^{n-7}\times 5^{n-4} = 1250$ find the value of n

25) Express each of the following numbers in standard form.
(i) 6872 (ii) 140000 (iii) 208000 (iv) 57·36

Work sheet
Class- VIII
Subject- Maths

Q-1 Define : i) Whole number ii) Natural number
iii) Integers iv) Rational numbers
v) three important properties of Rational number

Q-2 Represent each of the following numbers on the number line

i) $\frac{1}{3}$ ii) $1\frac{3}{4}$ iii) $-\frac{3}{4}$ iv) $-3\frac{1}{7}$ v) $5\frac{5}{7}$

Q-3 Express $\frac{-12}{13}$ as a rational number with numerator
i) -48 ii) 60

Q-4 Express $\frac{84}{-147}$ as a rational number with denominator i) 7 ii) -49

Q.5 Find five rational numbers between -3 and -2
Q. 6 Find five rational numbers between ~~$\frac{1}{7}$ and $\frac{1}{3}$~~
$\frac{-3}{4}$ and $\frac{5}{6}$

Q-7 Evaluate i) $\frac{-3}{5}+\frac{7}{5}+\frac{-1}{5}$ ii) $-3+\frac{1}{8}+\frac{(-2)}{5}$

iii) $\frac{-8}{15}+\frac{2}{-3}$ iv) -7 from $\frac{-4}{7}$

v) $\frac{4}{9} \div \frac{(-5)}{12}$ (vi) $\frac{-65}{14} \div \frac{13}{7}$ (vii) $\frac{(-9)}{16} \times \frac{(-64)}{27}$

Q-8 Simplify : i) $\left(\frac{13}{8}\times\frac{12}{13}\right)+\left(\frac{-4}{9}\times\frac{3}{-2}\right)$

ii) $\left(\frac{-12}{7}\times\frac{-14}{27}\right)-\left(\frac{-8}{45}\times\frac{9}{16}\right)$

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9) Find the additive inverse of :
a) $\frac{5}{7}$ b) $\frac{3}{14}$ c) 0 d) $\frac{1}{-6}$

10) The sum of two rational numbers is $\frac{-4}{3}$. If one of them is (-5). find the other.

11) Subtract the sum of -36 and $\frac{49}{22}$ from the sum of $\left(\frac{33}{8}\right)$ and $11\left(\frac{19}{4}\right)$.

12. What should be added to $\frac{2}{7}$ to get (-1) ?

13) What should be subtracted from $\left(\frac{-2}{3}\right)$ to get $\left(\frac{-5}{6}\right)$?

14) Divide the sum of $\frac{65}{12}$ and $\frac{8}{3}$ by their difference.

15) By what number should $\frac{-8}{15}$ be multiplied to get 24 ?

16) The product of two rational numbers is (-9). If one of the numbers is (-12). find the other.

17) The cost of $8\frac{1}{2}$ metres of cloth is ₹ $78\frac{3}{4}$. find the cost of 1 cloth per metre ?

18) Write all rules (laws) of Exponents.

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26) Add the following expressions :
a) $8ab, -5ab, 3ab, -ab$ (b) $5x, 7x, -6x$
(c) $x-3y+4z, y-2x-8z, 5x-2y-3z$
(d) $6ax-8by+3cz, 6by-11ax-cz$ and $10cz-2ax-3by$

27) Subtract : (a) $3a^2b$ from $(-5a^2b)$ (b) $(-8xy)$ from $7xy$
(c) (a^2+b^2-2ab) from (a^2+b^2+2ab)
(d) $-6p+q+3r+8$ from $p-2q-5r-8$

28) Multiply : (a) $4a(3a+7b)$ (b) $-17x^2(3x-4)$
(c) $\frac{7}{2}x^2y\left(\frac{4}{9}x^2+2y\right)$ (d) $(5x+7)(3x+4)$
(e) $(4x-5)(9x+8)$ (f) $(x^2-3x+7)(2x+3)$
(g) $(3x-2y-3)(2x-y)$

29) Find the value of $(-8u^2v^2)\times(-20uv)$ for $u=2.5$ and $v=1$

30) Subtract the sum of $(8a-6a^2+9)$ and $(-10-8+8a^2)$ from (-3).