

(2) The student-teacher ratio in a school is 45:2. If there are 4050 students in the school, how many teachers are there in the school?

Ans) 180.

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8.10.21

3) Find the value of:

i) $4pq \times 2r$ when $p=5$, $q=3$ and $r=\frac{1}{2}$
 $4 \times 5 \times 3 = 60 \times 2 \times \frac{1}{2} = 60$

ii) $\frac{xy}{z}$, when $x=8$, $y=4$ and $z=16$.
 $\frac{4 \times 8}{16} = \frac{32}{16} = 2$

iii) $\frac{a+b-c}{2a}$, when $a=5$, $b=7$ and $c=2$
 $= \frac{5+7-2}{2 \times 5} = \frac{10}{10} = 1$

2) Simplify

i) $12x - (5x + 7x)$

$$12x - 5x - 7x =$$

$$7x - 7x = 0$$

ii) $10m + (4n - 3n) - 5n$

$$10m + 4n - 3n - 5n$$

$$10m + 1n - 5n$$

$$10m - 4n$$

iii) $((5b - 6b) - (8b + 4b))$

$$-b - 12b$$

$$= -13b$$

iv) $-(-4a - 8a) =$

$$+4a + 8a = 12a$$

v) $x - (x - y) - (-x + y)$

$$x - x + y + x - y = x$$

$$= x - x + y - x + y = y$$

$$= y$$

vi) $p + (-q - r - s) - (p - q - r)$

$$p - q - r - s - p + q + r$$

$$-s$$

$$= -s$$

$$\begin{aligned} \text{vi)} \quad (a+b) - (c+d) - (e-f) \\ = a+b - c-d - e+f \\ = a+b - c - d - e+f \end{aligned}$$

ii)
ii)

$$\begin{aligned} \text{vii)} \quad 3x + (8x - 5x) - (7x - x) \\ = 3x + 8x - 5x - 7x + x \\ = 2x \end{aligned}$$

iii)
iv)

$$\text{ix)} \quad a - (a - b - c) = b + c$$

$$\text{x)} \quad 6a^2 + (2a^2 - a^2) - (a^2 - b^2) \\ = 6a^2 + b^2$$

v)
vi)
vii)

$$\text{xi)} \quad 2m - (3m + 2n) - 6n \\ = 2m - 3m - 2n - 6n \\ = -m - 8n$$

$$\text{xii)} \quad -n - 1 - (-m) = m - n - 1$$

$$\text{xiii)} \quad x + y - (x + y - x) = x$$

$$\text{xiv)} \quad 23 - (3x - 10y + 6x - 3y) = 33 - 3x + 13y$$

$$\text{xv)} \quad 3x + (2x - x^2) - 4x - 2 \\ = 2x - x^2 - 2$$

$$\begin{aligned} \text{xvi)} \quad 4 - (2a - 4a + 3a) + 6a \\ \text{xvii)} \quad 3x^2 - (3x - x^2 - 4) + 6x^2 - 32 - 4 \\ \text{xviii)} \quad - (4 - x) - (x + y - 2x + y) + x - y \end{aligned}$$

20(c)

i) $2a + b - c = 2a + (b - c)$

ii) ~~2x~~ $3x - 2 + y = 3x - (2 - y)$

iii) $6a - 3a + 9 = 6a - (3a - 9)$

iv) $a + b - (c + d) = a + (b - (c + d))$

v) $5a + 4b + 4c - 2c = 4c - (5a + 4b)$
~~4c - 2c~~

vi) $7x + 2z + 4y - 3 = -3 + 4y + (7x + 2z)$

vii) $3m - 2n + 6 = 6 - (2n + 3m + 6)$

viii) $12t + 9 - 1 - 9 + 5 = 2t + 9 - 9 + 5$

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4.