

Exercise - 19 - (A)

1. (i) $5+4=9$ and $5x+4x=9x$

(ii) $12+18=30$ and $12x^2y+18x^2y=30x^2y$

(iii) $7+16=23$ and $7a+16b=7a+16b$

(iv) $1+3=4$ and $x^2y+3xy^2=x^2y+3xy^2$

(v) $7-4=3$ and $7ab-4ab=3ab$

(vi) $12-5=7$ and $12x-5y=12x-5y$

(vii) $35-16=19$ and $35ab-16ba=19ab$

(viii) $28-13=15$ and $28ax^2-13a^2x=28ax^2-13a^2x$

(i) 2. The sum of -2 and $-5=-7$ and the sum of $-2x$ and $-5x=-7x$

(ii) The sum of 8 and $-3=5$ and the sum of $8ab$ and $-3ab=5ab$

(iii) The sum of -15 and $-4=-19$ and the sum of $-15x$ and $-4y=-15x-4y$

(iv) $15+8+3=26$ and $15x+8y+3x=18x+8y$

(v) $12-9+15=18$ and $12ab-9ab+15ab=18ab$

(vi) $25-7-9=9$ and $25xy-7xy-9yx=9xy$

(vii) $-4-6-5=-15$ and $4ax-6ax-5ay=-10ax-5ay$

$$3(i) 8xy + 3xy = (8+3)xy = 11xy$$

$$(ii) 2xyz + xyz + 6xyz = (2+1+6)xyz = 9xyz$$

$$(iii) 2a + 3a + 4b = (2+3)a + 4b = 5a + 4b$$

$$(iv) 3x + 2y = 3x + 2y$$

$$(v) 5m + 3n + 4p = 5m + 3n + 4p$$

$$(vi) 6a + 3a + 9ab = (6+3)a + 9ab = 9a + 9ab$$

$$(vii) 3p + 4q + 9q = 3p + (4+9)q = 3p + 13q$$

$$(viii) 5ab + 4ba + 6b = (5+4)ab + 6b = 9ab + 6b$$

$$(ix) 50pqr + 30pqr + 10pqr = (50+30)pqr + 10pqr = 20pqr + 10pqr$$

$$(x) (-2y) + (-y) + (-3y) = (-2-1-3)y = -6y$$

$$(xi) (-3b) + (-b) = (-3-1)b = -4b$$

$$(xii) 5b + (-4b) + (-10b) = (5-4-10)b = -9b$$

$$(xiii) (-2c) + (-c) + (-5c) = (-2-1-5)c = -8c$$

$$4(i) 6a - a - 5a - 2a = (6-1-5-2)a = (6-8)a = -2a$$

$$(ii) 2b - 3b - b + 4b = (2-3-1+4)b = (2+4-3-1)b = (6-4)b = 2b$$

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$$\begin{aligned}
 \text{(iii)} \quad 3x - 2x - 4x + 7x &= (3 - 2 - 4 + 7)x = \\
 &= (3 + 7 - 2 - 4)x \\
 &= (10 - 6)x \\
 &= 4x
 \end{aligned}$$

$$\begin{aligned}
 \text{(iv)} \quad 5ab + 2ab - 6ab + ab &= (5 + 2 - 6 + 1)ab \\
 &= (5 + 2 + 1 - 6)ab \\
 &= (8 - 6)ab \\
 &= 2ab
 \end{aligned}$$

$$\begin{aligned}
 \text{(v)} \quad 8x - 5y - 3x + 10y &= (8x - 3x + 10y - 5y) \\
 &= (8 - 3)x + (10 - 5)y \\
 &= 5x + 5y
 \end{aligned}$$

$$\begin{aligned}
 \text{(5)(i)} \quad -7x + 9x + 2x - 2x &= (-7 + 9 + 2 - 2)x \\
 &= (9 + 2 - 7 - 2)x \\
 &= (11 - 9)x \\
 &= 2x
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii)} \quad 5ab - 2ab - 8ab + 6ab &= (5 - 2 - 8 + 6)ab \\
 &= (5 + 6 - 2 - 8)ab \\
 &= (11 - 10)ab \\
 &= ab
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad -8a - 3a + 12a + 13a - 6a &= (-8 - 3 + 12 + 13 - 6)a \\
 &= (12 + 13 - 8 - 3 - 6)a \\
 &= (25 - 17)a \\
 &= 8a
 \end{aligned}$$

$$\begin{aligned}
 \text{(iv)} \quad 19abc - 11abc - 12abc + 14abc &= (19 - 11 - 12 + 14)abc \\
 &= (19 + 14 - 11 - 12)abc \\
 &= (33 - 23)abc = 10abc
 \end{aligned}$$