Cosmo School

Class-six

Subject- Math

Ex-4.3(Algebraic Expressions)

Date 08/07/2020

practice work sheet solution

Do yourself (1-5)

1. **2a+b,3a+b,5a+4b**

2. **-x+y+z, -y+x+z, -z+y+x**

3 **.5ax+2by-15cz , -11by-6ax-8cz ,3ax+8by-6cz**

4. **3g+2f-6h, -5f+4g+3h, 8f-6g+4h**

5. **$5x^3 - 2y^3$ and $7x^3 - 3y^3$**

6. **3ab, -4bc, 2bc**
= 3ab + (-4bc) + (2bc) (Writing the like terms together)
= 3ab – 2bc

7. **18d, 10d^2, -8d, d^2**
=18d + (-8d) + 10d^2 + d^2 (Writing the like terms together)
= 10d + 11d^2

8. **11x^2, -21y^2, 9x^2, 11y^2**
= 11x^2 + 9x^2 + (-21y^2) + 11y^2 (Writing the like terms together)
= 20x^2– 10y^2

9. **a, 2b, 2c, -c, -b, 3a**
= a + 3b + 2b + (-b) + 2c + (-c) (Writing the like terms together)
= 4a + b + c

10. **3a, 4a^3, -5a^2**

Solution -Do your self

11.$6m^2 + 7n^2, 11n^2 + 4m^2$

Solution -Do your self

12. 9p + 7q, 2p + 5q
= (9p + 7q) + (2p + 5q)
= (9p + 2p) + (7q + 5q)
(Writing the like terms together)
= 11p + 12q

13..$6m^2 + 7n^2, 11n^2 + 4m^2$
= $(6m^2 + 7n^2) + (11n^2 + 4m^2)$
= $(6m^2 + 4m^2) + (7n^2 + 11n^2)$
(Writing the like terms together)
= $10m^2 + 18n^2$

8.$3a^2 – 2b^2, 5b^2 – a^2$
= $(3a^2 – 2b^2) + (5b^2 – a^2)$
= $(3a^2 – a^2) + (-2b^2 + 5b^2)$
(Writing the like terms together)
= $2a^2 + 3b^2$

9.3b + 4c – d, 2d – c + 7b
= (3b + 4c – d) + (2d – c + 7b)
= (3b + 2d) + (4c – c) + (-d + 2d)
(Writing the like terms together)
= 5d + 3c + d

14.x + y + 2z, 2y + z + x
= (x + y + 2z) + (2y + z + x)
= (x + x) + (y + 2y) + (2z + z)
(Writing the like terms together)
= 2x + 3y + 3z

15. Add 5x + 7 and 2x + 10

Sum = (5x + 7) + (2x + 10)

= 5x + 7 + 2x + 10

= (5x + 2x) + (7 + 10)

= 7x + 17

16: Subtract 24xy – 10y – 18x from 30xy + 12y + 14x

Subtraction = 30xy + 12y + 14x – (24xy – 10y – 18x)

= 30xy + 12y + 14x – 24xy + 10y + 18x

= 30xy – 24xy + 12y + 10y + 14x + 18x

= 6xy + 22y + 32x

17.(a) What should be added to $x^2 + xy + y^2$ to obtain $2x^2 + 3xy$?
(b) What should be subtracted from 2a + 8b + 10 to get -3a + 7b + 16?

Answer:

(a) Let p should be added.

Then, according to question,

=> $x^2 + xy + y^2 + p = 2x^2 + 3xy$
=> $p = 2x^2 + 3xy – (x^2 + xy + y^2)$
=> $p = 2x^2 + 3xy – x^2 - xy - y^2$
=> $p = x^2 + 2xy - y^2$
Hence, $x^2 + 2xy - y^2$ should be added.
(b) Let q should be subtracted.

Then, according to question,

2a + 8b + 10 – q = -3a + 7b + 16

=> -q = -3a + 7b + 16 – (2a + 8b + 10)

=> -q = -3a + 7b + 16 – 2a - 8b – 10

=> -q = -5a – b + 6

=> q = -(-5a – b + 6)

=> q = 5a + b – 6

Hence, 5a + b – 6 should be subtracted

18.Subtract $x^2 + y^2 + 3xy$ from $4x^2 + 2xy – 3y^2$

Solution :

=$(4x^2 + 2xy – 3y^2) – (x^2 + y^2 + 3xy)$
= $4x^2 + 2xy – 3y^2 - x^2 - y^2 - 3xy$

$= 4x^2 + 2xy - 3y^2 - x^2 - y^2 - 3xy$
$= 3x^2 - xy - 4y^2$

19.What should be subtracted from $a^3 - 4a^2 + 5a - 6$ to obtain $a^2 - 2a + 1$?

Solution:

Let 'X' denote the required expression,
$(a^3 - 4a^2 + 5a - 6) - X = a^2 - 2a + 1$
Hence , $X = (a^3 - 4a^2 + 5a - 6) - (a^2 - 2a + 1)$
$= a^3 - 4a^2 + 5a - 6 - a^2 + 2a - 1$
$= a^3 - 4a^2 + 5a - 6 - a^2 + 2a - 1$
$= a^3 - 5a^2 + 7a - 7$

20.Subtract $a^3 - 4a^2 + 5a - 6$ from the sum of $3a^3 + a^2 + 1$ and $a^2 - 2$?

Solution:

$= [(3a^3 + a^2 + 1) + a^2 - 2)] - (a^3 - 4a^2 + 5a - 6)$
$= (3a^3 + a^2 + 1 + a^2 - 2) - (a^3 - 4a^2 + 5a - 6)$
$= (3a^3 + 2a^2 - 1) - (a^3 - 4a^2 + 5a - 6)$
$= 3a^3 + 2a^2 - 1 - a^3 + 4a^2 - 5a + 6$
$= 3a^3 + 2a^2 - 1 - a^3 + 4a^2 - 5a + 6$
$= 2a^3 + 6a^2 - 5a + 5$

Add 21(1,2,3,4)

1. $xy + yz + zx,\ 9zx + 7yz + 3yx$

Write the like terms one below the other,

$$\begin{array}{r} xy + yz + zx \\ +\ 3yx + 7yz + 9zx \\ \hline 4xy + 8yz + 10zx \end{array}$$

2. $2x + 3y,\ 6x - 2y,\ -4x + 12y - z$

Write the like terms one below the other,

$$\begin{array}{r} 2x + 3y \\ +\ 6x - 2y \\ +\ -4x + 12y - z \\ \hline 4x + 13y - z \end{array}$$

3. $a^2b + b^2c + c^2a,\ 10ac^2 + 2ba^2 - 16cb^2$

Write the like terms one below the other,

$$\begin{array}{r} a^2b + b^2c + c^2a \\ +\ 2a^2b - 16b^2c + 10c^2a \\ \hline 3a^2b - 15b^2c + 11c^2a \end{array}$$

4. $15mn - 6ab + 7abc,\ abc - 8nm + 20ba$

Write the like terms one below the other,

$$\begin{array}{r} 15mn - 6ab + 7abc \\ +\ -8mn + 20ab + abc \\ \hline 7mn + 14ab + 8abc \end{array}$$