Algebraic Expressions Ex 7.2 Q13

Answer :

(i) Required expression = $(p^3 - 4 + 3p^2) - (5p^2 - 3p^3 + p - 6)$
$= p^3 - 4 + 3p^2 - 5p^2 + 3p^3 - p + 6$
$= p^3 + 3p^3 + 3p^2 - 5p^2 - p - 4 + 6$
$= 4p^3 - 2p^2 - p + 2$

(ii) Required expression = $(7 + x - x^2) - (9 + x + 3x^2 + 7x^3)$
$= 7 + x - x^2 - 9 - x - 3x^2 - 7x^3$
$= -7x^3 - x^2 - 3x^2 + 7 - 9$
$= -7x^3 - 4x^2 - 2$

(iii) Required expression = $(1 - 5y^2) - (y^3 + 7y^2 + y + 1)$
$= 1 - 5y^2 - y^3 - 7y^2 - y - 1$
$= -y^3 - 5y^2 - 7y^2 - y$
$= -y^3 - 12y^2 - y$

(iv) Required expression = $(x^3 - 5x^2 + 3x + 1) - (6x^2 - 4x^3 + 5 + 3x)$
$= x^3 - 5x^2 + 3x + 1 - 6x^2 + 4x^3 - 5 - 3x$
$= x^3 + 4x^3 - 5x^2 - 6x^2 + 1 - 5$
$= 5x^3 - 11x^2 - 4$

Algebraic Expressions Ex 7.2 Q14

Answer :

Required expression = $\{(3x^2 - 5x + 2) + (-5x^2 - 8x + 9)\} - (4x^2 - 7x + 9)$
$= \{3x^2 - 5x + 2 - 5x^2 - 8x + 9\} - (4x^2 - 7x + 9)$
$= \{3x^2 - 5x^2 - 5x - 8x + 2 + 9\} - (4x^2 - 7x + 9)$
$= \{-2x^2 - 13x + 11\} - (4x^2 - 7x + 9)$
$= -2x^2 - 13x + 11 - 4x^2 + 7x - 9$
$= -2x^2 - 4x^2 - 13x + 7x + 11 - 9$
$= -6x^2 - 6x + 2$

Algebraic Expressions Ex 7.2 Q15

Answer :

Sum of $(13x - 4y + 7z)$ and $(-6z + 6x + 3y)$
$= \{(13x - 4y + 7z) + (-6z + 6x + 3y)$
$= \{13x - 4y + 7z - 6z + 6x + 3y\}$
$= \{13x + 6x - 4y + 3y + 7z - 6z\}$
$= 19x - y + z$

Sum of $(6x - 4y - 4z)$ and $(2x + 4y - 7)$
$= (6x - 4y - 4z) + (2x + 4y - 7)$
$= 6x - 4y - 4z + 2x + 4y - 7$
$= 8x - 4z - 7$

Now, required expression $= \{(8x - 4z - 7) - (19x - y + z)\}$
$= 8x - 4z - 7 - 19x + y - z$
$= 8x - 19x + y - 4z - z - 7$
$= -11x + y - 5z - 7$

Algebraic Expressions Ex 7.2 Q16

Answer :

Sum of $(x^2 + 3y^2 - 6xy)$, $(2x^2 - y^2 + 8xy)$, $(y^2 + 8)$ and $(x^2 - 3xy)$
$= \{(x^2 + 3y^2 - 6xy) + (2x^2 - y^2 + 8xy) + (y^2 + 8) + (x^2 - 3xy)\}$
$= \{x^2 + 3y^2 - 6xy + 2x^2 - y^2 + 8xy + y^2 + 8 + x^2 - 3xy\}$
$= \{x^2 + 2x^2 + x^2 + 3y^2 - y^2 + y^2 - 6xy + 8xy - 3xy + 8\}$
$= 4x^2 + 3y^2 - xy + 8$

Now, required expression $= (4x^2 + 3y^2 - xy + 8) - (-3x^2 + 4y^2 - xy + x - y + 3)$
$= 4x^2 + 3y^2 - xy + 8 + 3x^2 - 4y^2 + xy - x + y - 3$
$= 4x^2 + 3x^2 + 3y^2 - 4y^2 - x + y - 3 + 8$
$= 7x^2 - y^2 - x + y + 5$

Algebraic Expressions Ex 7.2 Q17

Answer :

The required expression can be got by subtracting xy - 3yz + 4zx from 4xy - 3zx + 4yz + 7.
Therefore, required expression $= (4xy - 3zx + 4yz + 7) - (xy - 3yz + 4zx)$
$= 4xy - 3zx + 4yz + 7 - xy + 3yz - 4zx$
$= 4xy - xy - 3zx - 4zx + 4yz + 3yz + 7$
$= 3xy - 7zx + 7yz + 7$

Algebraic Expressions Ex 7.2 Q18

Answer :

Let 'M' be the required expression. Then, we have
$x^2 - xy + y^2 - x + y + 3 - M = -x^2 + 3y^2 - 4xy + 1$
Therefore,
$M = (x^2 - xy + y^2 - x + y + 3) - (-x^2 + 3y^2 - 4xy + 1)$
$= x^2 - xy + y^2 - x + y + 3 + x^2 - 3y^2 + 4xy - 1$
Collecting positive and negative like terms together, we get
$x^2 + x^2 - xy + 4xy + y^2 - 3y^2 - x + y + 3 - 1$
$= 2x^2 + 3xy - 2y^2 - x + y + 2$

********** END **********

********** END **********