Exercise 8D

Q12

Answer :

$3 - [x - \{2y - (5x + y - 3) + 2x^2\} - (x^2 - 3y)]$

We will first remove the innermost grouping symbol ( ), followed by { } and then [ ].

$\therefore 3 - [x - \{2y - (5x + y - 3) + 2x^2\} - (x^2 - 3y)]$
$= 3 - [x - \{2y - 5x - y + 3 + 2x^2\} - x^2 + 3y]$
$= 3 - [x - \{y - 5x + 3 + 2x^2\} - x^2 + 3y]$
$= 3 - [x - y + 5x - 3 - 2x^2 - x^2 + 3y]$
$= 3 - [6x - 3 - 3x^2 + 2y]$
$= 3 - 6x + 3 + 3x^2 - 2y$
$= \mathbf{3x^2 - 2y - 6x + 6}$

Q13

Answer :

$xy - [yz - zx - \{yx - (3y - xz) - (xy - zy)\}]$

We will first remove the innermost grouping symbol ( ), followed by { } and then [ ].

$\therefore xy - [yz - zx - \{yx - (3y - xz) - (xy - zy)\}]$
$= xy - [yz - zx - \{yx - 3y + xz - xy + zy\}]$
$= xy - [yz - zx - \{-3y + xz + zy\}]$ $(\because \mathbf{xy = yx})$
$= xy - [yz - zx + 3y - xz - zy]$
$= xy - [-2zx + 3y]$ $(\because \mathbf{yz = zy,\ zx = xz})$
$= xy + 2zx - 3y$

Q14

Answer :

$2a - 3b - [3a - 2b - \{a - c - (a - 2b)\}]$
We will first remove the innermost grouping symbol ( ), followed by { } and then [ ].

$\therefore 2a - 3b - [3a - 2b - \{a - c - (a - 2b)\}]$
$= 2a - 3b - [3a - 2b - \{a - c - a + 2b\}]$
$= 2a - 3b - [3a - 2b - \{-c + 2b\}]$
$= 2a - 3b - [3a - 2b + c - 2b]$
$= 2a - 3b - [3a - 4b + c]$
$= 2a - 3b - 3a + 4b - c$
$= -a + b - c$

Q15

Answer :

-a − [a + {a + b − 2a − (a − 2b)} − b]

We will first remove the innermost grouping symbol ( ), followed by { } and then [ ].

∴ −a − [a + {a + b − 2a − (a − 2b)} − b]

= −a − [a + {a + b − 2a − a + 2b} − b]

= −a − [a + {3b − 2a } − b]

= −a − [a + 3b − 2a − b]

= −a − [2b − a]

= −a − 2b + a

= −2b

Q16

Answer :

$2a-[4b-\{4a-(3b-\overline{2a+2b})\}]$

We will first remove the innermost grouping symbol bar bracket. Next, we will remove ( ), followed by { } and then [ ].

∴ $2a-[4b-\{4a-(3b-\overline{2a+2b})\}]$

= 2a-[4b-{4a-(3b-2a-2b)}]

= 2a-[4b-{4a-(b-2a)}]

= 2a-[4b-{4a-b+2a}]

=2a-[4b-{6a-b}]

= 2a-[4b-6a+b]

= 2a-[5b-6a]

= 2a-5b+6a

= 8a-5b

Q17

Answer :

5*x* − [4*y* − {7*x* − (3*z* − 2*y*) + 4*z* − 3(*x* + 3*y* − 2*z*)}]

We will first remove the innermost grouping symbol ( ), followed by { } and then [ ].

∴ 5*x* − [4*y* − {7*x* − (3*z* − 2*y*) + 4*z* − 3(*x* + 3*y* − 2*z*)}]

= 5*x* − [4*y* − {7*x* − 3*z* + 2*y* + 4*z* − 3*x* − 9*y* + 6*z*}]

= 5*x* − [4*y* − {4*x* + 7*z* − 7*y*}]

= 5*x* − [4*y* − 4*x* − 7*z* + 7*y*]

= 5*x* − [11*y* − 4*x* − 7*z*]

= 5*x* − 11*y* + 4*x* + 7*z*

= 9*x* − 11*y* + 7*z*

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