Exercise 6E

Q1

Answer :

(c) $(-6a + 17b)$

$$\begin{array}{rrrr} 6a & +4b & -c & +3 \\ & +2b & -3c & +4 \\ -7a & +11b & +2c & -1 \\ -5a & & +2c & -6 \\ \hline -6a & +17b & +0c & +0 \end{array}$$

Q2

Answer :

(d) $(3p^2 + 5q - 9r^3 + 7)$

$$\begin{array}{rrrr} 7p^2 & +3q & -2r^3 & +4 \\ 4p^2 & -2q & +7r^3 & -3 \\ - & + & - & + \\ \hline 3p^2 & +5q & -9r^3 & +7 \end{array}$$

Q3

Answer :

(d) $x^2 + 2x - 15$

$$(x+5)(x-3)$$
$$\Rightarrow (x)(x-3) + (5)(x-3)$$
$$\Rightarrow x^2 - 3x + 5x - 15$$
$$\Rightarrow x^2 + 2x - 15$$

Q4

Answer :

(b) $(6x^2 + 7x - 3)$

$$(2x+3)(3x-1)$$
$$\Rightarrow (2x)(3x-1)+(3)(3x-1)$$
$$\Rightarrow 6x^2 - 2x + 9x - 3$$
$$\Rightarrow 6x^2 + 7x - 3$$

Q5

Answer :

(c) $(x^2 + 8x + 16)$

$$(x+4)(x+4)$$
$\Rightarrow (x+4)^2$ $\left(\text{according to the formula } (a+b)^2 = a^2+2ab+b^2\right)$
$\Rightarrow (x^2)+2(x)(4)+(4)^2$
$\Rightarrow x^2+8x+16$

Q6

Answer :

(d) $(x^2 - 12x + 36)$

$(x-6)(x-6)$
$\Rightarrow (x-6)^2$ $\left(\text{according to the formula } (a-b)^2 = a^2-2ab+b^2\right)$
$\Rightarrow (x^2)-2(x)(6)+(6)^2$
$\Rightarrow x^2-12x+36$

Q7

Answer :

(b) $(4x^2 - 25)$

$(2x+5)(2x-5)$
$\Rightarrow (2x)^2-(5)^2$ $\left(\text{according to the formula } (a+b)(a-b) = a^2-b^2\right)$
$\Rightarrow 4x^2 - 25$

Q8

Answer :

(c) $-4ab^2$

$$8a^2b^3 \div (-2ab)$$
$$\Rightarrow \left(\frac{8}{-2}\right)\left(a^{2-1}\right)\left(b^{3-1}\right)$$
$$\Rightarrow -4ab^2$$

Q9

Answer :

(b) $(2x + 1)$

$$\begin{array}{r|l} x+1 & 2x^2+3x+1 \\ & 2x^2+2x \\ & - \quad - \\ \hline & +1x+1 \\ & +1x+1 \\ & - \quad - \\ \hline & x \end{array} \quad 2x+1$$

Q10

Answer :

(a) $(x - 2)$

$$
\begin{array}{r|l}
x^2 - 4x + 4 & x - 2 \\
\cline{2-2}
x^2 - 2x & \\
- \quad + & \\
\cline{1-1}
-2x + 4 & \\
-2x + 4 & \\
+ \quad - & \\
\cline{1-1}
\times & \\
\cline{1-1}
\end{array}
$$

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