

RD SHARMA

Solutions

Class 8 Maths

Chapter 6

Ex 6.5

Multiply**Q1. $(5x + 3)$ by $(7x + 2)$** **SOLUTION:**

To multiply, we will use distributive law as follows:

$$\begin{aligned}(5x + 3)(7x + 2) &= 5x(7x + 2) + 3(7x + 2) \\ &= (5x \times 7x + 5x \times 2) + (3 \times 7x + 3 \times 2) \\ &= (35x^2 + 10x) + (21x + 6) \\ &= 35x^2 + 10x + 21x + 6 \\ &= 35x^2 + 31x + 6\end{aligned}$$

Thus, the answer is $35x^2 + 31x + 6$ **Q2. $(2x + 8)$ by $(x - 3)$** **SOLUTION:**

To multiply, we will use distributive law as follows:

$$\begin{aligned}(2x + 8)(x - 3) &= 2x(x - 3) + 8(x - 3) \\ &= (2x \times x - 2x \times 3) + (8x - 8 \times 3) \\ &= (2x^2 - 6x) + (8x - 24) \\ &= 2x^2 - 6x + 8x - 24 \\ &= 2x^2 + 2x - 24\end{aligned}$$

Thus, the answer is $2x^2 + 2x - 24$.**Q3. $(7x + y)$ by $(x + 5y)$** **SOLUTION:**

To multiply, we will use distributive law as follows:

$$\begin{aligned}(7x + y)(x + 5y) &= 7x(x + 5y) + y(x + 5y) \\ &= 7x^2 + 35xy + xy + 5y^2 \\ &= 7x^2 + 36xy + 5y^2\end{aligned}$$

Thus, the answer is $7x^2 + 36xy + 5y^2$.**Q4. $(a - 1)$ by $(0.1a^2 + 3)$** **SOLUTION:**

To multiply, we will use distributive law as follows:

$$\begin{aligned}(a - 1)(0.1a^2 + 3) &= 0.1a^2(a - 1) + 3(a - 1) \\ &= 0.1a^3 - 0.1a^2 + 3a - 3\end{aligned}$$

Thus, the answer is $0.1a^3 - 0.1a^2 + 3a - 3$.**Q5. $(3x^2 + y^2)(2x^2 + 3y^2)$**

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (3x^2 + y^2)(2x^2 + 3y^2) \\
 &= 3x^2(2x^2 + 3y^2) + y^2(2x^2 + 3y^2) \\
 &= 6x^4 + 9x^2y^2 + 2x^2y^2 + 3y^4 \\
 &= 6x^4 + 11x^2y^2 + 3y^4
 \end{aligned}$$

Thus, the answer is $6x^4 + 11x^2y^2 + 3y^4$.

Q6. $(\frac{3}{5}x + \frac{1}{2}y)$ by $(\frac{5}{6}x + 4y)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (\frac{3}{5}x + \frac{1}{2}y)(\frac{5}{6}x + 4y) \\
 &= \frac{3}{5}x(\frac{5}{6}x + 4y) + \frac{1}{2}y(\frac{5}{6}x + 4y) \\
 &= \frac{1}{2}x^2 + \frac{12}{5}xy + \frac{5}{12}xy + 2y^2 \\
 &= \frac{1}{2}x^2 + (\frac{144+25}{60})xy + 2y^2 \\
 &= \frac{1}{2}x^2 + (\frac{169}{60})xy + 2y^2
 \end{aligned}$$

Thus, the answer is $\frac{1}{2}x^2 + (\frac{169}{60})xy + 2y^2$.

Q7. $(x^6 - y^6)(x^2 + y^2)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (x^6 - y^6)(x^2 + y^2) \\
 &= x^6(x^2 + y^2) - y^6(x^2 + y^2) \\
 &= (x^8 + x^6y^2) - (y^6x^2 + y^8) \\
 &= x^8 + x^6y^2 - y^6x^2 - y^8
 \end{aligned}$$

Thus, the answer is $x^8 + x^6y^2 - y^6x^2 - y^8$.

Q8. $(x^2 + y^2)(3a + 2b)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (x^2 + y^2)(3a + 2b) \\
 &= x^2(3a + 2b) + y^2(3a + 2b) \\
 &= 3ax^2 + 2bx^2 + 3ay^2 + 2by^2
 \end{aligned}$$

Thus, the answer is $3ax^2 + 2bx^2 + 3ay^2 + 2by^2$.

Q9. $[-3d + (-7f)](5d + f)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & [-3d + (-7f)](5d + f) \\
 &= (-3d)(5d + f) + (-7f)(5d + f) \\
 &= (-15d^2 - 3df) + (-35df - 7f^2) \\
 &= -15d^2 - 3df - 35df - 7f^2 \\
 &= -15d^2 - 38df - 7f^2
 \end{aligned}$$

Thus, the answer is $-15d^2 - 38df - 7f^2$.

Q10. $(0.8a - 0.5b)(1.5a - 3b)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (0.8a - 0.5b)(1.5a - 3b) \\
 &= 0.8a(1.5a - 3b) - 0.5b(1.5a - 3b) \\
 &= 1.2a^2 - 2.4ab - 0.75ab + 1.5b^2 \\
 &= 1.2a^2 - 3.15ab + 1.5b^2
 \end{aligned}$$

Thus, the answer is $1.2a^2 - 3.15ab + 1.5b^2$.

Q11. $(2x^2y^2 - 5xy^2)(x^2 - y^2)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (2x^2y^2 - 5xy^2)(x^2 - y^2) \\
 &= 2x^2y^2(x^2 - y^2) - 5xy^2(x^2 - y^2) \\
 &= 2x^4y^2 - 2x^2y^4 - 5x^3y^2 + 5xy^4
 \end{aligned}$$

Thus, the answer is $2x^4y^2 - 2x^2y^4 - 5x^3y^2 + 5xy^4$.

Q12. $(\frac{x}{7} + \frac{x^2}{2})(\frac{2}{5} + \frac{9x}{4})$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
 & (\frac{x}{7} + \frac{x^2}{2})(\frac{2}{5} + \frac{9x}{4}) \\
 &= \frac{x}{7}(\frac{2}{5} + \frac{9x}{4}) + \frac{x^2}{2}(\frac{2}{5} + \frac{9x}{4}) \\
 &= \frac{2x}{35} + \frac{9x^2}{28} + \frac{x^2}{5} + \frac{9x^3}{8} \\
 &= \frac{2x}{35} + (\frac{45+28}{140})x^2 + \frac{9x^3}{8} \\
 &= \frac{2x}{35} + \frac{73}{140}x^2 + \frac{9x^3}{8}
 \end{aligned}$$

Thus, the answer is $\frac{2x}{35} + \frac{73}{140}x^2 + \frac{9x^3}{8}$

Q13. $(-\frac{a}{7} + \frac{a^2}{9})(\frac{b}{2} - \frac{b^2}{3})$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned} & \left(-\frac{a}{7} + \frac{a^2}{9}\right)\left(\frac{b}{2} - \frac{b^2}{3}\right) \\ &= \left(-\frac{a}{7}\right)\left(\frac{b}{2} - \frac{b^2}{3}\right) + \left(\frac{a^2}{9}\right)\left(\frac{b}{2} - \frac{b^2}{3}\right) \\ &= \left(-\frac{ab}{14} + \frac{ab^2}{21}\right) + \left(\frac{a^2b}{18} - \frac{a^2b^2}{27}\right) \\ &= -\frac{ab}{14} + \frac{ab^2}{21} + \frac{a^2b}{18} - \frac{a^2b^2}{27} \end{aligned}$$

Thus, the answer is $-\frac{ab}{14} + \frac{ab^2}{21} + \frac{a^2b}{18} - \frac{a^2b^2}{27}$.

Q14. $(3x^2y - 5xy^2)\left(\frac{1}{5}x^2 + \frac{1}{3}y^2\right)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned} & (3x^2y - 5xy^2)\left(\frac{1}{5}x^2 + \frac{1}{3}y^2\right) \\ &= \frac{1}{5}x^2(3x^2y - 5xy^2) + \frac{1}{3}y^2(3x^2y - 5xy^2) \\ &= \frac{3}{5}x^4y - x^3y^2 + x^2y^3 - \frac{5}{3}xy^4 \end{aligned}$$

Thus, the answer is $\frac{3}{5}x^4y - x^3y^2 + x^2y^3 - \frac{5}{3}xy^4$.

Q15. $(2x^2 - 1)(4x^3 + 5x^2)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned} & (2x^2 - 1)(4x^3 + 5x^2) \\ &= 2x^2(4x^3 + 5x^2) - 1(4x^3 + 5x^2) \\ &= 8x^5 + 10x^4 - 4x^3 - 5x^2 \end{aligned}$$

Thus, the answer is $8x^5 + 10x^4 - 4x^3 - 5x^2$.

Q16. $(2xy + 3y^2)(3y^2 - 2)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned} & (2xy + 3y^2)(3y^2 - 2) \\ &= 2xy(3y^2 - 2) + 3y^2(3y^2 - 2) \\ &= 6xy^3 - 4xy + 9y^4 - 6y^2 \\ &= 9y^4 + 6xy^3 - 6y^2 - 4xy \end{aligned}$$

Thus, the answer is $9y^4 + 6xy^3 - 6y^2 - 4xy$.

Find the following products and verify the result for $x = -1$ and $y = -2$:

Q17. $(3x - 5y)(x + y)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}(3x-5y)(x+y) &= 3x(x+y)-5y(x+y) \\ &= 3x^2+3xy-5xy-5y^2 \\ &= 3x^2-2xy-5y^2 \\ \therefore (3x-5y)(x+y) &= 3x^2-2xy-5y^2\end{aligned}$$

Now, we put $x = -1$ and $y = -2$ on both sides to verify the result.

LHS =

$$\begin{aligned}(3x-5y)(x+y) &= \{3(-1)-5(-2)\} \{-1+(-2)\} \\ &= (-3+10)(-3) \\ &= -21\end{aligned}$$

RHS =

$$\begin{aligned}3x^2-2xy-5y^2 &= 3(-1)^2-2(-1)(-2)-5(-2)^2 \\ &= 3 \times 1-4-5 \times 4 \\ &= 3-4-20 \\ &= -21\end{aligned}$$

Because LHS is equal to RHS, the result is verified.

Q18. $(x^2y-1)(3-2x^2y)$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}(x^2y-1)(3-2x^2y) &= x^2y(3-2x^2y)-1(3-2x^2y) \\ &= 3x^2y-2x^4y^2-3+2^2y \\ &= 5x^2y-2x^4y^2-3 \\ \therefore (x^2y-1)(3-2x^2y) &= 5x^2y-2x^4y^2-3\end{aligned}$$

Now, we put $x = -1$ and $y = -2$ on both sides to verify the result.

LHS =

$$\begin{aligned}(x^2y-1)(3-2x^2y) &= [(-1)^2(-2)-1][3-2(-1)^2(-2)] \\ &= [1 \times (-2)-1][3-2 \times 1 \times (-2)] \\ &= (-2-1)(3+4) \\ &= -3 \times 7 \\ &= -21\end{aligned}$$

RHS =

$$\begin{aligned}5x^2y-2x^4y^2-3 &= 5(-1)^2(-2)-2(-1)^4(-2)^2-3 \\ &= [5 \times 1 \times (-2)]-[2 \times 1 \times 4]-3 \\ &= -10-8-3 \\ &= -21\end{aligned}$$

Because LHS is equal to RHS, the result is verified.

Q19. $(\frac{1}{3}x-\frac{y^2}{5})(\frac{1}{3}x+\frac{y^2}{5})$

SOLUTION:

To multiply, we will use distributive law as follows:

$$\begin{aligned}
& \left(\frac{1}{3}x - \frac{y^2}{5}\right)\left(\frac{1}{3}x + \frac{y^2}{5}\right) \\
&= \left[\frac{1}{3}x\left(\frac{1}{3}x + \frac{y^2}{5}\right)\right] - \left[\frac{y^2}{5}\left(\frac{1}{3}x + \frac{y^2}{5}\right)\right] \\
&= \left[\frac{1}{9}x^2 + \frac{xy^2}{15}\right] - \left[\frac{xy^2}{15} + \frac{y^4}{25}\right] \\
&= \frac{1}{9}x^2 + \frac{xy^2}{15} - \frac{xy^2}{15} - \frac{y^4}{25} \\
&= \frac{1}{9}x^2 - \frac{y^4}{25} \\
&\therefore \left(\frac{1}{3}x - \frac{y^2}{5}\right)\left(\frac{1}{3}x + \frac{y^2}{5}\right) = \frac{1}{9}x^2 - \frac{y^4}{25}
\end{aligned}$$

Now, we put $x = -1$ and $y = -2$ on both sides to verify the result.

LHS =

$$\begin{aligned}
& \left(\frac{1}{3}x - \frac{y^2}{5}\right)\left(\frac{1}{3}x + \frac{y^2}{5}\right) \\
&= \left[\frac{1}{3}(-1) + \frac{(-2)^2}{5}\right] \\
&= \left(-\frac{1}{3} - \frac{4}{5}\right)\left(-\frac{1}{3} + \frac{4}{5}\right) \\
&= \left(-\frac{17}{15}\right)\left(\frac{7}{15}\right) \\
&= -\frac{119}{225}
\end{aligned}$$

RHS =

$$\begin{aligned}
& \frac{1}{9}x^2 - \frac{y^4}{25} \\
&= \frac{1}{9}(-1)^2 - \frac{(-2)^4}{25} \\
&= \frac{1}{9} \times 1 - \frac{16}{25} \\
&= \frac{1}{9} - \frac{16}{25} \\
&= -\frac{119}{225}
\end{aligned}$$

Because LHS is equal to RHS, the result is verified.

Simplify:

Q20. $x^2(x + 2y)(x - 3y)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& x^2(x + 2y)(x - 3y) \\
&= [x^2(x + 2y)](x - 3y) \\
&= (x^3 + 2x^2y)(x - 3y) \\
&= x^3(x - 3y) + 2x^2y(x - 3y) \\
&= x^4 - 3x^3 + 2x^3 - 6x^2y^2 \\
&= x^4 - x^3 - 6x^2y^2
\end{aligned}$$

Thus, the answer is $x^4 - x^3 - 6x^2y^2$.

Q21. $(x^2 - 2y^2)(x + 4y)x^2y^2$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (x^2 - 2y^2)(x + 4y)x^2y^2 \\
&= [x^2(x + 4y) - 2y^2(x + 4y)]x^2y^2 \\
&= (x^3 + 4x^2y - 2xy^2 - 8y^3)x^2y^2 \\
&= x^5y^2 + 4x^4y^3 - 2x^3y^4 - 8x^2y^5
\end{aligned}$$

Thus, the answer is $x^5y^2 + 4x^4y^3 - 2x^3y^4 - 8x^2y^5$.

Q22. $a^2b^2(a + 2b)(3a + b)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& a^2b^2(a + 2b)(3a + b) \\
&= [a^2b^2(a + 2b)](3a + b) \\
&= (a^3b^2 + 2a^2b^3)(3a + b) \\
&= 3a(a^3b^2 + 2a^2b^3) + b(a^3b^2 + 2a^2b^3) \\
&= 3a^4b^2 + 6a^3b^3 + a^3b^3 + 2a^2b^4 \\
&= 3a^4b^2 + 7a^3b^3 + 2a^2b^4
\end{aligned}$$

Thus, the answer is $3a^4b^2 + 7a^3b^3 + 2a^2b^4$.

Q23. $x^2(x - y)y^2(x + 2y)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& x^2(x - y)y^2(x + 2y) \\
&= [x^2(x - y)][y^2(x + 2y)] \\
&= (x^3 - x^2y)(xy^2 + 2y^3) \\
&= x^3(xy^2 + 2y^3) - x^2y(xy^2 + 2y^3) \\
&= x^4y^2 + 2x^3y^3 - [x^3y^3 + 2x^2y^4] \\
&= x^4y^2 + 2x^3y^3 - x^3y^3 - 2x^2y^4 \\
&= x^4y^2 + x^3y^3 - 2x^2y^4
\end{aligned}$$

Thus, the answer is

$$\begin{aligned}
& x^4y^2 + 2x^3y^3 - x^3y^3 - 2x^2y^4 \\
&= x^4y^2 + x^3y^3 - 2x^2y^4
\end{aligned}$$

Q24. $(x^3 - 2x^2 + 5x - 7)(2x - 3)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (x^3 - 2x^2 + 5x - 7)(2x - 3) \\
&= 2x(x^3 - 2x^2 + 5x - 7) - 3(x^3 - 2x^2 + 5x - 7) \\
&= 2x^4 - 4x^3 + 10x^2 - 14x - 3x^3 + 6x^2 - 15x + 21 \\
&= 2x^4 - 4x^3 - 3x^3 + 10x^2 + 6x^2 - 14x - 15x + 21 \\
&= 2x^4 - 7x^3 + 16x^2 - 29x + 21
\end{aligned}$$

Thus, the answer is $2x^4 - 7x^3 + 16x^2 - 29x + 21$.

Q25. $2x^4 - 7x^3 + 16x^2 - 29x + 21$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
 & (5x + 3)(x-1)(3x-2) \\
 &= [(5x + 3)(x-1)](3x-2) \\
 &= [5x(x-1) + 3(x-1)](3x-2) \\
 &= [5x^2 - 5x + 3x - 3](3x-2) \\
 &= 3x(5x^2 + 2x - 3) - 2(5x^2 + 2x - 3) \\
 &= 15x^3 - 6x^2 - 9x - [10x^2 - 4x - 6] \\
 &= 15x^3 - 6x^2 - 9x - 10x^2 + 4x + 6 \\
 &= 15x^3 - 16x^2 - 5x + 6
 \end{aligned}$$

Thus, the answer is

$$\begin{aligned}
 & 15x^3 - 6x^2 - 9x - 10x^2 + 4x + 6 \\
 &= 15x^3 - 16x^2 - 5x + 6
 \end{aligned}$$

Q26. $(5-x)(6-5x)(2-x)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
 & (5-x)(6-5x)(2-x) \\
 &= [(5-x)(6-5x)](2-x) \\
 &= [5(6-5x) - x(6-5x)](2-x) \\
 &= (30 - 25x - 6x + 5x^2)(2-x) \\
 &= (30 - 31x + 5x^2)(2-x) \\
 &= 2(30 - 31x + 5x^2) - x(30 - 31x + 5x^2) \\
 &= 60 - 62x + 10x^2 - 30x + 31x^2 - 5x^3 \\
 &= 60 - 92x + 41x^2 - 5x^3
 \end{aligned}$$

Thus, the answer is $60 - 92x + 41x^2 - 5x^3$.

Q27. $(2x^2 + 3x - 5)(3x^2 - 5x + 4)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
 & (2x^2 + 3x - 5)(3x^2 - 5x + 4) \\
 &= 2x^2(3x^2 - 5x + 4) + 3x(3x^2 - 5x + 4) - 5(3x^2 - 5x + 4) \\
 &= 6x^4 - 10x^3 + 8x^2 + 9x^3 - 15x^2 + 12x - 15x^2 + 25x - 20 \\
 &= 6x^4 - 10x^3 + 9x^3 + 8x^2 - 15x^2 - 15x^2 + 25x + 12x - 20 \\
 &= 6x^4 - x^3 - 22x^2 + 36x - 20
 \end{aligned}$$

Thus, the answer is $6x^4 - x^3 - 22x^2 + 36x - 20$.

Q28. $(3x-2)(2x-3) + (5x-3)(x+1)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (3x-2)(2x-3) + (5x-3)(x+1) \\
&= [(3x-2)(2x-3)] + [(5x-3)(x+1)] \\
&= [3x(2x-3) - 2(2x-3)] + [5x(x+1) - 3(x+1)] \\
&= 6x^2 - 9x - 4x + 6 + 5x^2 + 5x - 3x - 3 \\
&= 6x^2 + 5x^2 - 9x - 4x + 5x - 3x - 3 + 6 \\
&= 11x^2 - 11x + 3
\end{aligned}$$

Thus, the answer is $11x^2 - 11x + 3$.

Q29. $(5x-3)(x+2) - (2x+5)(4x-3)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (5x-3)(x+2) - (2x+5)(4x-3) \\
&= [(5x-3)(x+2)] - [(2x+5)(4x-3)] \\
&= [5x(x+2) - 3(x+2)] - [2x(4x-3) + 5(4x-3)] \\
&= 5x^2 + 10x - 3x - 6 + 8x^2 + 6x - 20x + 15 \\
&= 5x^2 - 8x^2 + 10x - 3x + 6x - 20x - 6 + 15 \\
&= -3x^2 - 7x + 9
\end{aligned}$$

Thus, the answer is $-3x^2 - 7x + 9$.

Q30. $(3x+2y)(4x+3y) - (2x-y)(7x-3y)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (3x+2y)(4x+3y) - (2x-y)(7x-3y) \\
&= [(3x+2y)(4x+3y)] - [(2x-y)(7x-3y)] \\
&= [3x(4x+3y) + 2y(4x+3y)] - [2x(7x-3y) - y(7x-3y)] \\
&= 12x^2 + 9xy + 8xy + 6y^2 - 14x^2 + 6xy + 7xy - 3y^2 \\
&= 12x^2 - 14x^2 + 9xy + 8xy + 6xy + 7xy + 6y^2 - 3y^2 \\
&= -2x^2 + 30xy + 3y^2
\end{aligned}$$

Thus, the answer is $-2x^2 + 30xy + 3y^2$.

Q31. $(x^2-3x+2)(5x-2) - (3x^2+4x-5)(2x-1)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned}
& (x^2-3x+2)(5x-2) - (3x^2+4x-5)(2x-1) \\
&= [(x^2-3x+2)(5x-2)] - [(3x^2+4x-5)(2x-1)] \\
&= [5x(x^2-3x+2) - 2(x^2-3x+2)] - [2x(3x^2+4x-5) - 1(3x^2+4x-5)] \\
&= [5x^3 - 15x^2 + 10x - 2x^2 + 6x - 4] - [6x^3 + 8x^2 - 10x - 3x^2 - 4x + 5] \\
&= 5x^3 - 15x^2 + 10x - 2x^2 + 6x - 4 - 6x^3 - 8x^2 + 10x + 3x^2 + 4x - 5 \\
&= -x^3 - 22x^2 + 30x - 9
\end{aligned}$$

Thus, the answer is $-x^3 - 22x^2 + 30x - 9$.

Q32. $(x^3-2x^2+3x-4)(x-1) - (2x-3)(x^2-x+1)$

SOLUTION:

To simplify, we will use distributive law as follows:

$$\begin{aligned} & (x^3 - 2x^2 + 3x - 4)(x - 1) - (2x - 3)(x^2 - x + 1) \\ &= [(x^3 - 2x^2 + 3x - 4)(x - 1)] - [(2x - 3)(x^2 - x + 1)] \\ &= [x(x^3 - 2x^2 + 3x - 4) - 1(x^3 - 2x^2 + 3x - 4)] - [2x(x^2 - x + 1) - 3(x^2 - x + 1)] \\ &= x^4 - 2x^3 + 3x^2 - 4x - x^3 + 2x^2 - 3x + 4 - 2x^3 + 2x^2 - 2x + 3x^2 - 3x + 3 \\ &= x^4 - 2x^3 - 2x^3 - x^3 + 3x^2 + 2x^2 + 2x^2 + 3x^2 - 4x - 3x - 2x - 3x + 4 + 3 \\ &= x^4 - 5x^3 + 10x^2 - 12x + 7 \end{aligned}$$

Thus, the answer is $x^4 - 5x^3 + 10x^2 - 12x + 7$.