



MATHS

BOOKS - NAVNEET PUBLICATION

FACTORISATION OF ALGEBRAIC EXPRESSIONS

Question Bank

1. Factorise :

$$x^2 + 9x + 18$$



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2. Factorise :

$$x^2 - 10x + 9$$



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3. Factorise :

$$y^2 + 24y + 144$$



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4. Factorise :

$$5y^2 + 5y - 10$$



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5. Factorise :

$$p^2 - 2p - 35$$



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6. Factorise :

$$p^2 - 7p - 44$$



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7. Factorise :

$$m^2 - 23m + 120$$



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8. Factorise :

$$m^2 - 25m + 100$$



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9. Factorise :

$$3x^2 + 14x + 15$$



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10. Factorise :

$$2x^2 + x - 45$$



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11. Factorise :

$$20x^2 + 26x + 8$$



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12. Factorise :

$$44x^2 - x - 3$$



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13. Factorise :

$$x^3 + 64y^3$$



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14. Factorise :

$$125p^3 + q^3$$



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15. Factorise :

$$125k^3 + 27m^3$$



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16. Factorise :

$$2l^3 + 432m^3$$



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17. Factorise :

$$24a^3 + 81b^3$$



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18. Factorise :

$$y^3 + \frac{1}{8y^3}$$



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19. Factorise :

$$a^3 + \frac{8}{a^3}$$



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20. Factorise :

$$1 + \frac{q^3}{125}$$



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21. Factorise :

$$y^3 - 27$$



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22. Factorise :

$$x^3 - 64y^3$$



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23. Factorise :

$$27m^3 - 216n^3$$



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24. Factorise :

$$125y^3 - 1$$



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25. Factorise :

$$8p^3 - \frac{27}{p^3}$$



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26. Factorise :

$$343a^3 - 512b^3$$



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27. Factorise :

$$64x^3 - 729y^3$$



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28. Factorise :

$$16a^3 - \frac{128}{b^3}$$



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29. Simplify :

$$(x + y)^3 - (x - y)^3$$



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30. Simplify :

$$(3a + 5b)^3 - (3a - 5b)^3$$



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31. Simplify :

$$(a + b)^3 - 1^3 - b^3$$



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32. Simplify :

$$p^3 - (p + 1)^3$$



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33. Simplify :

$$(3xy - 2ab)^3 - (3xy + 2ab)^3$$



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34. Simplify :

$$\frac{m^2 - n^2}{(m + n)^2} \times \frac{m^2 + mn + n^2}{m^3 - n^3}$$



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35. Simplify :

$$\frac{a^2 + 10a + 21}{a^2 + 6a - 7} \times \frac{a^2 - 1}{a + 3}$$



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36. Simplify :

$$\frac{8x^3 - 27y^3}{4x^2 - 9y^2}$$



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37. Simplify :

$$\frac{x^2 - 5x - 24}{(x + 3)(x + 8)} \times \frac{x^2 - 64}{(x - 8)^2}$$



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38. Simplify :

$$\frac{3x^2 - x - 2}{x^2 - 7x + 12} \div \frac{3x^2 - 7x - 6}{x^2 - 4}$$



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39. Simplify :

$$\frac{4x^2 - 11x + 6}{16x^2 - 9}$$





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40. Simplify :

$$\frac{a^3 - 27}{5a^2 - 16a + 3} \div \frac{a^2 + 3a + 9}{25a^2 - 1}$$



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41. Simplify :

$$\frac{1 - 2x + x^2}{1 - x^3} \times \frac{1 + x + x^2}{1 + x}$$



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42. Choose the correct alternative answer for each of the following questions :

If $m = x + \frac{1}{x}$ and $n = x - \frac{1}{x}$, then $m^2 - n^2 = ?$

A. 2

B. 4

C. $x^2 - \frac{1}{x^2}$

D. $2x^2 - \frac{2}{x^2}$

Answer: B



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43. Choose the correct alternative answer for each of the following questions :

The factors of $x^2 - x - 12$ are

A. $(x-3)(x-4)$

B. $(x+3)(x+4)$

C. $(x+3)(x-4)$

D. $(x-3)(x+4)$

Answer: C



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44. Choose the correct alternative answer for each of the following questions :

Which of the following are the factors of $6x^2 + 5x - 6$?

A. $(2x + 3)(3x - 2)$

B. $(2x - 3)(3x + 2)$

C. $(2x + 3)(3x + 2)$

D. $(2x - 3)(3x - 2)$

Answer: A



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45. Fill in the blanks :

$$x^2 - 10x + 24 = (\dots)(\dots)$$



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46. Fill in the blanks :

$$x^2 - 10x - 24 = (\dots)(\dots)$$



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47. Fill in the blanks :

$$6x^2 \dots - 10 = (2x - 5)(3x + 2)$$



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48. Fill in the blanks :

$$9(4x^2 - y^2)^2 = [\dots(4x^2 - y^2)]^2$$



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49. Factorise :

$$x^2 + 25x + 144$$



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50. Factorise :

$$x^2 + 2x - 63$$



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51. Factorise :

$$p^2 - 2p - 120$$



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52. Factorise :

$$27x^3 + 125y^3$$



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53. Factorise :

$$p^3 + \frac{27}{8p^3}$$



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54. Factorise :

$$216 - 125x^3$$



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55. Factorise :

$$7x^2 + 18xy - 9y^2$$



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56. Factorise :

$$5x^2 - 5xy - 360y^2$$



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57. Factorise :

$$6m^2 - 25mn - 9n^2$$



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58. Factorise :

$$21p^2 - 23pq - 20q^2$$



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59. Factorise :

$$(2x - 3y)^3 - (8x^3 - 27y^3)$$



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60. Factorise :

$$(3x + 5y)^3 - (3x - 5y)^3$$



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61. Factorise :

$$\frac{a^2 - 5a - 14}{a^2 - 4} \times \frac{2a^2 - a - 6}{2a^2 - 13a + 21}$$



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62. Simplify :

$$\frac{2a^3 + 5a^2 - 7a}{2a^2 - 7a + 5} \div \frac{2a^3 + a^2 - 21a}{2a^2 - 11a + 15}$$



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63. Simplify :

$$\frac{y^2 - 3y + 2}{y^2 + y - 2} \div \frac{2y^2 - 5y + 2}{2y^2 + 3y - 2}$$



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64. Simplify :

$$\frac{x^2 + 4x - 21}{x^2 - 9x + 14} \times \frac{x^2 - 8x + 7}{x^2 + 6x - 7} \div \frac{x^2 - 9}{x^2 + x - 6}$$



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65. Simplify :

$$\frac{x^2 + 2x - 15}{2x^2 - 9x + 4} \div \left[\frac{x^2 - 8x + 15}{2x^2 - 11x + 12} \div \frac{2x^2 - 11x + 5}{2x^2 + 7x - 15} \right]$$





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