

Factorisation

1. Factorise the following polynomials:

$$14(3y-5z)^3 + 7(3y-5z)^2$$

$$\text{Ans } [7(3y-5z)^2 (6y-10z+1)]$$

2. $(n-10)^2 + (10-n)$

$$\text{Ans } [(n-10) (n-11)]$$

3. $5x + 10y - 7(x+2y)^2$

$$\text{Ans: } (x+2y) (5-7x-14y)$$

4. $(x+y) (3x-7) - (x+y) (2x-11)$

$$\text{Ans: } (x+y) (x+4)$$

5. $(3a-1)^2 - 6a+2$

$$\text{Ans: } [3(3a-1) (a-1)]$$

6. $x(x-2z) + y(x-2z) + (2z-x)$

$$\text{Ans: } (x-2z) (x+y-1)$$

7. Factorise:

$$ab^2 - bc^2 - ab + c^2$$

$$\text{Ans: } (ab-c) (b-1)$$

8. $2b^2 + 8ab + 4ac + bc$

$$\text{Ans: } (2b+c) (b+4a)$$

9. $6pm + 9mq + 8pn + 12qn$

$$\text{Ans: } (3m+4n) (2p+3q)$$

10. $2axy^2 + 10x + 3ay^2 + 15$

$$\text{Ans } (2x+3) (ay^2+5)$$

11. $axy^2 + 3x + 2a^2y^2 + 6a$

$$\text{Ans: } (x+2a) (ay^2+3)$$

12. $x^2 - 16$

$$\text{Ans: } (x+4) (x-4)$$

13. $\frac{16}{81}m^2 - 121$

Ans: $(\frac{4}{9}m+11) (\frac{4}{9}m-11)$

14. $49(2x+y)^2 - 64(x-3y)^2$

Ans: $(22x-17y) (6x+31y)$

15. $2x^4 - 32$

Ans: $2(x^2+4) (x+2) (x-2)$

16. $a^2 + 4b^2 - 4ab - 9c^2$

Ans: $(a-2b+3c) (a-2b-3c)$

17. $16x^2 - 24yz - 9y^2 - 16z^2$

Ans: $(4x+3y+4z) (4x-3y-4z)$

18. $2x^2+9x-5$

Ans: $(x+5) (2x-1)$

19. $12x^2 - x - 1$

Ans: $(3x-1) (4x+1)$

20. $-5x^2 - x + 4$

Ans: $[- (5x-4) (x+1)]$

21. $12y^3 - 14y^2 - 10y$

Ans: $2y (3y-5) (2y+1)$

22. $15x^4 + 3x^2 - 18$

Ans: $3(5x^2+6) (x-1) (x+1)$

23. Divide:

$44(x^4 - 5x^3 - 24x^2)$ by $11x(x-8)$

Ans: $4x(x+3)$

24. Divide:
 $z(5z^2-80)$ by $5z(z+4)$

Ans: $(z-4)$

25. Solve

Ans : $(a = 0)$

$$\frac{a+5}{5}=a+1$$

26. Factorise:

$$48a^2 - 243b^2$$

Ans: $3(4a+9b)(4a-9b)$

27. $x^3 - 25x$

Ans: $x(x+5)(x-5)$

28. $25(x+y)^2 - 36(x-2y)^2$

Ans: $(11x-7y)(17y-x)$

29. $4x^2 - y^2 + 6y - 9$

Ans: $(2x+y-3)(2x-y+3)$

30. Evaluate:

$$(8.6)^2 - (1.4)^2$$

Ans: 72

Data Handling

Fill Ups:

1. The difference between the maximum and the minimum observations in a data is called the _____ of the data.
 2. The number of observations in a particular class interval is called the _____ of the class interval.
 3. Lower limit of the class interval 26-33 is _____.
 4. Upper limit of the class interval 21-25 is _____.
 5. The range of the data 5, 8, 15, 21, 7, 10 is _____.
 6. The range of the data 15, 13, 14, 17, 19, 16, 14, 15 is _____.
7. Fill in the blanks in the following table:

Weight in kg	10-20	20-30	30-40	40-50	50-60
Class marks					

8. The following are the monthly rents (in rupees) of 30 shops:
42,49,37,82,37,75,62,54,79,84,75,63,44,74,36,69,54,48,
74, 39,48,45,61,71,47,38,80,51,31,43
Using the class intervals of equal width in which one class interval being 40-50 (excluding 50), construct a frequency table for the above data.

9. The following is the distribution of weights (in kg) of 52 persons:

Weight in kg	persons
30-40	10
40-50	15
50-60	17
60-70	6
70-80	4

- (a) What is the lower limit of class 50-60?
- (b) Find the class marks of the class 40-50, 50-60?
- (c) What is the class size?

10. Construct a frequency table with class-intervals 0-5 (5 not included) of the following marks obtained by a group of 30 students in an examination.

0, 5, 7, 10, 12, 15, 20, 22, 25, 27, 8, 11, 17, 3, 6, 9, 17, 19, 21, 29, 31, 35, 37, 40, 42, 45, 49, 4, 50, 16

11. The heights (in cm) of 30 students of class VIII are given below:

155, 158, 154, 158, 160, 148, 149, 150, 153, 159, 161, 148, 157, 153, 157, 162, 159, 151, 154, 156, 160, 152, 147, 155, 163, 155, 157, 153.

Prepare a frequency distribution table with 160-164 as one of the class intervals.

12. The monthly wages of 30 workers in a factory are given below:-

830, 835, 890, 810, 835, 836, 869, 845, 898, 890, 820, 860, 832, 833, 855, 845, 804, 808, 812, 840, 885, 835, 836, 878, 840, 868, 890, 806, 840, 890.

