



2.8 – Factorisation

Student name: _____ Score: _____

1. Factorise **completely** $3x^2y - 12y^3$.

..... [2]

2. Factorise $x^2 - 3x - 4$.

..... [2]

3. Factorise completely.

(a) $x^2 + 2x - 48$

..... [2]

(b) $xy + 2xz - 3y - 6z$

..... [2]

4. Factorise

$$6x^2 - x - 2.$$

..... [2]

5. Factorise $2x^2 + x - 6$.

..... [2]

6. Factorise completely.

(a) $pq - py + xy - qx$

..... [2]

(b) $32c^2 - 50d^2$

..... [2]

7. (a) $8ax - by + 2ay - 4bx$

..... [2]

(b) $3x^2 - 5x - 12$

..... [2]

8. Factorise completely.

$$2a - b + 2ax - bx$$

..... [2]

9. (a) Factorise.

$$x^2 - y^2$$

..... [1]

(b) Work out.

$$164^2 - 36^2$$

..... [1]

10. Factorise completely.

(a) $12x^2 - 27xy$

..... [2]

(b) $4a^2 + 8ab - ac - 2bc$

..... [2]

11. Factorise completely.

$$2p - q + 2xp - xq$$

..... [2]

12. Factorise completely.

$$2ac - 5bc + 6a - 15b$$

..... [2]

13. Factorise completely.

(a) $x^2 - 2x - 24$

..... [2]

(b) $xy^2 - 4xz^2$

..... [2]

14. Factorise completely.

$$3xy - 6yz$$

..... [2]

15. Factorise completely.

$$8a^2 - 50b^2$$

..... [3]

16. Factorise.

(a) $x^2 - 5x - 24$

..... [2]

(b) $pq + p - tq - t$

..... [2]

17. Factorise completely.

(a) $3x^2 - 75y^2$

..... [2]

(b) $15ap + 10bp - 9a - 6b$

..... [2]



18. Factorise.

(a) $p^2 - p - 30$

..... [2]

(b) $x(u - v) - y(v - u)$

..... [2]

19. Factorise completely.

$6x^2 - 2x$

..... [2]

20. Factorise $3y - y^2$.

..... [1]

21. Factorise.

$2 - t - 2a + at$

..... [2]

22. Factorise.

$4x^2 - 4xy - 3y^2$

..... [3]

23. Factorise completely.

$2x^2 - 18$

..... [2]

24. Factorise completely.

$ab - a - b + 1$

..... [2]

25. Factorise completely.

$6ac - 9bc - 8ad + 12bd$

..... [2]

26. Factorise.

$2x^2 - 3x - 5$

..... [2]

27. Factorise completely.

(a) $4x^2y - 6xy^2$

..... [2]

(b) $9x^2 - 1$

..... [1]



28. Factorise.

(a) $12ax - 2by + 3ay - 8bx$

..... [2]

(b) $5x^2 - 6x - 8$

..... [2]

29. (a) Factorise $a^2 - b^2$.

..... [1]

(b) Work out $5.37^2 - 4.63^2$.

..... [2]

30. Factorise.

$$1 + a - c - ac$$

..... [2]

31. Factorise $x^3 - 2x$.

..... [1]

32. Factorise fully.

$$6x^2 - 7x - 3$$

..... [2]

33. Factorise fully.

$$2cx^2 - 2dx - cx + d$$

..... [2]

34. (a) Factorise $x^2 - 3x - 10$.

..... [2]

(b) Using your answer to **part (a)**, solve $x^2 - 3x - 10 > 0$.

..... [2]

35. Factorise completely.

$$5x^2 - 125y^2$$

..... [3]

36. Factorise.

$$4x^2 - 7x - 2$$

..... [2]



37. Factorise.

(a) $64x^2 - 1$

..... [1]

(b) $2y^2 - y - 6$

..... [2]

38. Factorise completely.

$$8x^2 - 18$$

..... [2]

39. Factorise.

(a) $x^2 - 1$

..... [1]

(b) $3x^2 - 6ax - axy + 2a^2y$

..... [2]

40. Factorise.

(a) $8x + 14$

..... [1]

(b) $8ax^2 - 6bx^3$

..... [2]

(c) $6ax + 9ay - 8bx - 12by$

..... [2]

41. Factorise

(a) $x^2 - x - 6,$

..... [2]

(b) $3ax + 2bx - 4by - 6ay.$

..... [2]

42. Factorise.

$$3x + 6 - 2xy - 4y$$

..... [2]

43. Factorise.

(a) $49 - 16u^2$

..... [1]

(b) $1 + 4xy - 2x - 2y$

..... [2]