

## Further Factorising

Factorise and simplify the following:

$$1. \frac{x^2 + x - 30}{x^2 - 2x - 15}$$

$$2. \frac{x^2 - 9x + 14}{x^2 - 11x + 28}$$

$$3. \frac{x^2 + 10x + 24}{x^2 + 9x + 18}$$

$$4. \frac{x^2 + 10x + 25}{x^2 + 3x - 10}$$

$$5. \frac{x^2 - 2x - 63}{x^2 - 5x - 36}$$

$$6. \frac{2x + 6}{2x + 2}$$

$$7. \frac{3x + 15}{x^2 + 7x + 10}$$

$$8. \frac{x^2 - x - 6}{x^2 - 5x + 6}$$

$$9. \frac{x^2 + 4x + 3}{x^2 + 8x + 7}$$

$$10. \frac{x^2 - 49}{2x - 14}$$

$$11. \frac{x^2 - x - 12}{2x^2 - 5x - 12}$$

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

$$13. \frac{x^2 + 9x + 20}{2x^2 + 11x + 12}$$

$$14. \frac{2x^2 + 4x + 1}{2x^2 + 3x + 1}$$

$$15. \frac{3x + 15}{4x + 20}$$

$$16. \frac{3x^2 + 10x - 8}{2x^2 + 5x - 12}$$

$$17. \frac{2x^2 + 7xy + 3y^2}{2x^2 + 3xy + y^2}$$

$$18. \frac{2x^2 + x}{3x^2 + x}$$

$$19. \frac{8a^2 + 16ab + 6b^2}{20a^2 + 22ab + 6b^2}$$

$$20. \frac{12a^2 - 22ab + 6b^2}{6a^2 - 3ab - 9b^2}$$

## Further Factorising - Answers

Factorise and simplify the following:

$$1. \frac{x+6}{x-3}$$

$$2. \frac{x-2}{x-4}$$

$$3. \frac{x+4}{x+3}$$

$$4. \frac{x+5}{x-2}$$

$$5. \frac{x+7}{x-4}$$

$$6. \frac{x+3}{x+1}$$

$$7. \frac{3}{x+2}$$

$$8. \frac{x+2}{x-2}$$

$$9. \frac{x+3}{x+7}$$

$$10. \frac{x+7}{2}$$

$$11. \frac{x+3}{2x+3}$$

$$12. \frac{x-2}{2x+1}$$

$$13. \frac{x+5}{2x+2}$$

$$14. \frac{2x+1}{x+1}$$

$$15. \frac{3}{4}$$

$$16. \frac{3x-2}{2x-3}$$

$$17. \frac{3+3y}{x+y}$$

$$18. \frac{2x+1}{3x+1}$$

$$19. \frac{2a+3b}{5a+3b}$$

$$20. \frac{6a-2b}{3a+3b}$$



## Further Factorising 2

1.  $\frac{x^2 + x - 30}{x^2 - 2x - 15}$

2.  $\frac{x^2 - 9x + 14}{x^2 - 11x + 28}$

3.  $\frac{x^2 + 10x + 24}{x^2 + 9x + 18}$

4.  $\frac{x^2 + 10x + 25}{x^2 + 3x - 10}$

5.  $\frac{x^2 - 2x - 63}{x^2 - 5x - 36}$

6.  $\frac{2x + 6}{2x + 2}$

7.  $\frac{3x + 15}{x^2 + 7x + 10}$

8.  $\frac{x^2 - x - 6}{x^2 - 5x + 6}$

9.  $\frac{x^2 + 4x + 3}{x^2 + 8x + 7}$

10.  $\frac{x^2 - 49}{2x - 14}$

## Further Factorising 2

1.  $\frac{x^2 + x - 30}{x^2 - 2x - 15}$

2.  $\frac{x^2 - 9x + 14}{x^2 - 11x + 28}$

3.  $\frac{x^2 + 10x + 24}{x^2 + 9x + 18}$

4.  $\frac{x^2 + 10x + 25}{x^2 + 3x - 10}$

5.  $\frac{x^2 - 2x - 63}{x^2 - 5x - 36}$

6.  $\frac{2x + 6}{2x + 2}$

7.  $\frac{3x + 15}{x^2 + 7x + 10}$

8.  $\frac{x^2 - x - 6}{x^2 - 5x + 6}$

9.  $\frac{x^2 + 4x + 3}{x^2 + 8x + 7}$

10.  $\frac{x^2 - 49}{2x - 14}$

### Further Factorising 3

$$1. \frac{x^2 - x - 12}{2x^2 - 5x - 12}$$

$$2. \frac{x^2 + x - 6}{2x^2 + 7x + 3}$$

$$3. \frac{x^2 + 9x + 20}{2x^2 + 11x + 12}$$

$$4. \frac{2x^2 + 4x + 1}{2x^2 + 3x + 1}$$

$$5. \frac{3x + 15}{4x + 20}$$

$$6. \frac{3x^2 + 10x - 8}{2x^2 + 5x - 12}$$

$$7. \frac{2x^2 + 7xy + 3y^2}{2x^2 + 3xy + y^2}$$

$$8. \frac{2x^2 + x}{3x^2 + x}$$

$$9. \frac{8a^2 + 16ab + 6b^2}{20a^2 + 22ab + 6b^2}$$

$$10. \frac{12a^2 - 22ab + 6b^2}{6a^2 - 3ab - 9b^2}$$

### Further Factorising 3

$$1. \frac{x^2 - x - 12}{2x^2 - 5x - 12}$$

$$2. \frac{x^2 + x - 6}{2x^2 + 7x + 3}$$

$$3. \frac{x^2 + 9x + 20}{2x^2 + 11x + 12}$$

$$4. \frac{2x^2 + 4x + 1}{2x^2 + 3x + 1}$$

$$5. \frac{3x + 15}{4x + 20}$$

$$6. \frac{3x^2 + 10x - 8}{2x^2 + 5x - 12}$$

$$7. \frac{2x^2 + 7xy + 3y^2}{2x^2 + 3xy + y^2}$$

$$8. \frac{2x^2 + x}{3x^2 + x}$$

$$9. \frac{8a^2 + 16ab + 6b^2}{20a^2 + 22ab + 6b^2}$$

$$10. \frac{12a^2 - 22ab + 6b^2}{6a^2 - 3ab - 9b^2}$$

## Further Factorising 1

1.  $\frac{x^2 + 7x + 12}{x^2 + 9x + 20}$

2.  $\frac{x^2 + 17x + 70}{x^2 + 11x + 28}$

3.  $\frac{x^2 + 14x + 48}{x^2 + 10x + 24}$

4.  $\frac{2x^2 + 27x + 55}{2x^2 + 25x + 33}$

5.  $\frac{2x^2 + 15x + 27}{2x^2 + 23x + 63}$

6.  $\frac{5x^2 + 26x + 24}{2x^2 + 14x + 24}$

## Further Factorising 1

1.  $\frac{x^2 + 7x + 12}{x^2 + 9x + 20}$

2.  $\frac{x^2 + 17x + 70}{x^2 + 11x + 28}$

3.  $\frac{x^2 + 14x + 48}{x^2 + 10x + 24}$

4.  $\frac{2x^2 + 27x + 55}{2x^2 + 25x + 33}$

5.  $\frac{2x^2 + 15x + 27}{2x^2 + 23x + 63}$

6.  $\frac{5x^2 + 26x + 24}{2x^2 + 14x + 24}$

## Further Factorising 1

1.  $\frac{x+3}{x+5}$

2.  $\frac{x+10}{x+4}$

3.  $\frac{x+8}{x+4}$

4.  $\frac{2x+5}{2x+3}$

5.  $\frac{x+3}{x+7}$

6.  $\frac{5x+6}{2x+6}$