

SUPER 12s



SUPER 12s CAN BE USED AS AN INDIVIDUALISED MASTERY LEARNING PROGRAM.

2 ALGEBRA
2.7 FACTORISING
2.7 LEVEL 5

NAME : _____

Skill description: Factorising binomial expressions that contain a common numeric factor and variable.

Essential Revision

1. Use the distributive law to expand the bracket.

$$13(x - 3)$$

2. Factorise.

$$16x + 10$$

3. Factorise.

$$-12x + 28$$

4. Factorise.

$$5x^2 - 3x$$

5. Use the distributive law to expand the bracket.

$$y(x - z)$$

6. Factorise.

$$12x - 40$$

7. Factorise.

$$-32c + 40$$

8. Factorise.

$$2y^3 + 5y^2$$

9. Use the distributive law to expand the bracket.

$$2(x + 7)$$

10. Factorise.

$$3x + 15$$

11. Factorise.

$$-12x - 60$$

12. Factorise.

$$a^4 - 3a$$

Solutions can be found at the end of the booklet.

score
12

STRATEGIES TO SOLVE THE PROBLEMS

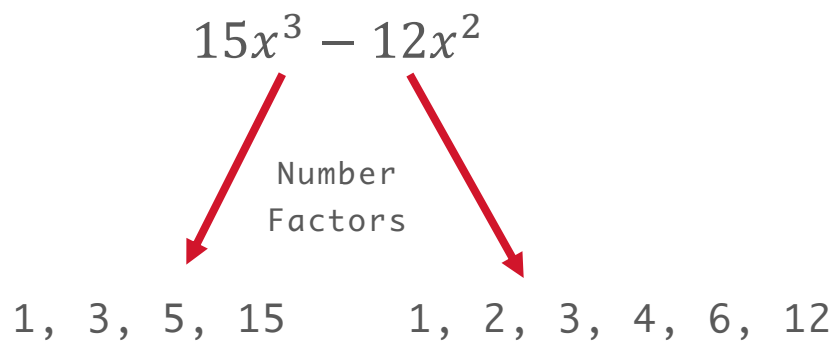
Example 1

Factorise the following.

$$15x^3 - 12x^2$$

Step 1

Look for common factors in the numbers and variables. It often helps to list the factors of the numbers in each term.



The variable x is also common to both terms

Step 2

Choose the **highest common factor** for the number and the **highest common order** for the variables and place them outside the bracket.

Highest common factor and order = $3x^2$

$$15x^3 - 12x^2$$

$$3x^2(\quad)$$

Step 3

To determine the terms that go inside the bracket divide each of the original terms by the factor.

$$\begin{array}{c} 15x^3 - 12x^2 \\ \begin{array}{c} \color{red}{\downarrow} \quad \color{blue}{\downarrow} \\ \div 3x^2 \\ \color{red}{\downarrow} \quad \color{blue}{\downarrow} \end{array} \\ 3x^2(5x - 4) \end{array}$$



SCAN THE QR CODE OR
VISIT SUPER12S.COM
TO WATCH A VIDEO OF
THESE EXAMPLES.



QUESTIONS

Factorise.

1.

$$3x^2 - 9x$$

2.

$$10x^4 + 15x^2$$

3.

$$12b^3 + 4b^2$$

4.

$$10y^2 + 14y$$

5.

$$20x^3 - 12x^2$$

6.

$$24c^6 + 30c^3$$

7.

$$12x^5 - 60x^2$$

8.

$$7a^2 + 28a$$

9.

$$10x^4 + 220x^3$$

10.

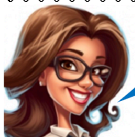
$$12d^3 + 6d$$

11.

$$8x^7 + 10x^5$$

12.

$$12x^5 - 40x^2$$



SOLUTIONS CAN BE FOUND AT
THE END OF THE BOOKLET.

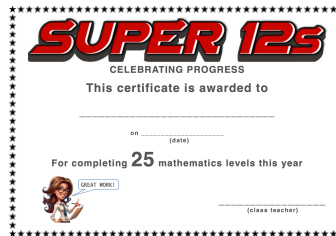
score $\frac{\quad}{12}$

MASTERY TEST

Teacher's signature

I'VE COMPLETED

LEVELS THIS YEAR



Solutions to Essential Revision

1. $13x - 39$

2. $2(8x + 5)$

3. $-4(3x - 7)$

4. $x(5x - 3)$

5. $xy - yz$

6. $4(3x - 10)$

7. $-8(4c - 5)$

8. $y^2(2y + 5)$

9. $2x + 14$

10. $3(x + 5)$

11. $-12(x + 5)$

12. $a(a^3 - 3)$

Solutions to Questions

1. $3x(x - 3)$

2. $5x^2(2x^2 + 3)$

3. $4b^2(3b + 1)$

4. $2y(5y + 7)$

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

6. $6c^3(4c^3 + 5)$

7. $12x^2(x^3 - 5)$

8. $7a(a + 4)$

9. $10x^3(x + 22)$

10. $6d(2d^2 + 1)$

11. $2x^5(4x^2 + 5)$

12. $4x^2(3x^3 - 10)$