SUPER 12s

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

2 ALGEBRA
2.3 COLLECT LIKE TERMS
2.3 LEVEL 3

NAME : _____

Skill description: Confirmation, through substitution, of the addition of like terms.

Essential Revision

1. Identify the like terms.

$7g, \quad 2p, \quad 5x, \quad 5g$

2. Simplify.

$7y + 7y$

3. Identify the like terms.

$-3a^2, \quad 2a^3, \quad 2a, \quad 5a^3$

4. Simplify.

$15y - 8y$

5. Identify the like terms.

$2x^4, \quad 7a^2, \quad x^3, \quad 4a^2$

6. Simplify.

$13x + 5x - x$

7. Identify the like terms.

$3y, \quad 9y, \quad y, \quad b$

8. Simplify.

$12xy^2 + 2xy^2$

9. Identify the like terms.

$3z^4, \quad 8cz^4, \quad 3z^5, \quad 2z^5$

10. Simplify.

$11a^2b - 3a^2b + a^2b$

11. Identify the like terms.

$3a^2b, \quad 2a^2b, \quad 3a^5b, \quad 3a^3b$

12. Simplify.

$x^2y^2 - 4x^2y^2$

Solutions can be found at the end of the booklet.

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

STRATEGIES TO SOLVE THE PROBLEMS

Example 1

Show that $2x + 4x = 6x$ by substituting $x = 2$.

Step 1

Substitute the value for x.

$$2x + 4x = 6x$$

$$2(2) + 4(2) = 6(2)$$

Step 2

Evaluate the terms.

$$4 + 8 = 12$$

Step 3

Combine terms to show that the left-hand side equates to the right-hand side.

$$12 = 12$$

Example 2

Show that $x^2 + 3x^2 = 4x^2$ by substituting $x = 2$.

Step 1

Substitute the value for x.

$$x^2 + 3x^2 = 4x^2$$

$$(2)^2 + 3(2)^2 = 4(2)^2$$

Step 2

Evaluate the terms.

$$4 + 12 = 16$$

Step 3

Combine terms to show that the left-hand side equates to the right-hand side.

$$16 = 16$$

Example 3

Show that $2ab + ab = 3ab$ by substituting $a = 2 \, and \, b = 5$.

Step 1

Substitute the values for a and b.

$$2ab + ab = 3ab$$

$$\downarrow$$

$$2(2)(5) + (2)(5) = 3(2)(5)$$

Step 2

Evaluate the terms.

$$20 + 10 = 30$$

Step 3

Combine terms to show that the left-hand side equates to the right-hand side.

$$30 = 30$$

Example 4

Show that $-2p - 4p = -6p$ by substituting $p = 3$.

Step 1

Substitute the value for p.

$$-2p - 4p = -6p$$

$$-2(3) - 4(3) = -6(3)$$

Step 2

Evaluate the terms.

$$-6 - 12 = -18$$

Step 3

Combine terms to show that the left-hand side equates to the right-hand side.

$$-18 = -18$$

QUESTIONS

1. Show that $3x + 2x = 5x$ by substituting $x = 2$.

2. Show that $5y - 4y = y$ by substituting $y = 5$.

3. Show that $3x + 5x - x = 7x$ by substituting $x = 3$.

4. Show that $y^2 + 2y^2 = 3y^2$ by substituting $y = 3$.

5. Show that $-g - 4g = -5g$ by substituting $g = 5$.

6. Show that $ab + ab = 2ab$ by substituting $a = 2 \; and \; b = 7$.

7. Show that $4p - 2p - p = p$ by substituting $p = 5$.

8. Show that $bc + 2bc = 3bc$ by substituting $b = 5$ *and* $c = 2$.

9. Show that $-5y - 4y = -9y$ by substituting $y = 2$.

10. Show that $3x + 2x = 5x$ by substituting $x = -3$.

11. Show that $4n - 2n - 2n = 0$ by substituting $n = 2$.

12. Show that $xy + 3xy = 4xy$ by substituting $x = 2$ *and* $y = 5$.

SOLUTIONS CAN BE FOUND AT THE END OF THE BOOKLET.

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

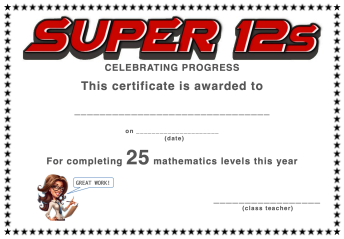
MASTERY TEST

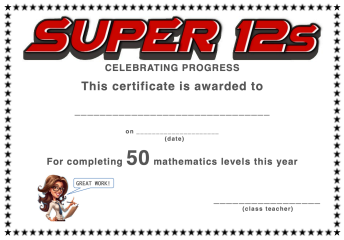
Teacher's signature

I'VE COMPLETED

_____

LEVELS THIS YEAR





Solutions to Essential Revision

1. $7g,\ 5g$	2. $14y$
3. $2a^3,\ 5a^3$	4. $7y$
5. $7a^2,\ 4a^2$	6. $17x$
7. $3y,\ 9y,\ y$	8. $14xy^2$
9. $3z^5,\ 2z^5$	10. $9a^2b$
11. $3a^2b,\ 2a^2b$	12. $-3x^2y^2$

Solutions to Questions

1. $10 = 10$	2. $5 = 5$
3. $21 = 21$	4. $27 = 27$
5. $-25 = -25$	6. $28 = 28$
7. $5 = 5$	8. $30 = 30$
9. $-18 = -18$	10. $-15 = -15$
11. $0 = 0$	12. $40 = 40$