

SUPER 12s



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

2 ALGEBRA

2.10 SOLVING EQUATIONS

2.10 LEVEL 5

NAME : _____

Skill description: Introduction of variables & solving equations with the multiplication/division of integers.

Essential Revision

1.

$$5 + 3 =$$

2. Solve for the unknown.

$$\blacksquare + 4 = 12$$

3. Solve the equation.

$$t + 4 = 55$$

4. Solve the equation.

$$2m = 22$$

5. Solve the equation.

$$\frac{x}{6} = 7$$

6.

$$7 + 9 =$$

7. Solve for the unknown.

$$\blacksquare + 9 = 21$$

8. Solve the equation.

$$h - 3 = 22$$

9. Solve the equation.

$$7x = 56$$

10. Solve the equation.

$$\frac{y}{4} = 6$$

11.

$$6 + 4 =$$

12. Solve for the unknown.

$$\blacksquare + 4 = 7$$

Solutions can be found at the end of the booklet.

score 12

STRATEGIES TO SOLVE THE PROBLEMS

Strategy 1 – Apply the inverse operation to both sides.

For any constants on the same side of the equal sign as the desired variable, apply the inverse operation (of that constant) to both sides of the equation.

Example 1

Solve the equation.

$$\frac{2x}{7} = 4$$

Step 1

Start with the number 7. The 7 is mathematically linked to the variable x by $\div$. With the 7, we apply the inverse operation ($\times$) to both sides of the equation.

$$\begin{array}{c} \downarrow \quad \downarrow \\ \frac{2x}{7} = 4 \\ \times 7 = \times 7 \\ \hline 2x = 28 \end{array}$$

Step 2

The 2 is mathematically linked to the variable x by $\times$. With the 2, we apply the inverse operation ($\div$) to both sides of the equation.

$$\begin{array}{c} \downarrow \quad \downarrow \\ 2x = 28 \\ \div 2 = \div 2 \\ \hline x = 14 \end{array}$$

Strategy 2 – Change the side, change the sign.

For any constants on the same side of the equal sign as the desired variable, move to the other side and apply the inverse operation.

Example 2

Solve the equation.

$$\frac{4x}{3} = 12$$



Step 1

Take the 3 and move it to the other side of the equal sign and change the sign from $\div$ to $\times$. Remember the 3 is connected to the x by division (shown as a fraction).

$$\frac{4x}{3} = 12$$


$$4x = 12 \times 3$$

$$4x = 36$$

Step 2

Now take the 4 and move it to the other side of the equal sign and change the sign from $\times$ to $\div$. Remember the 4 is connected to the x by multiplication.

$$4x = 36$$


$$x = \frac{36}{4}$$

$$x = 9$$

QUESTIONS

Solve the equations.

1.

$$\frac{2x}{3} = 6$$

2.

$$\frac{3y}{5} = 6$$

3.

$$\frac{5p}{3} = 10$$

4.

$$\frac{2m}{7} = 6$$

5.

$$\frac{3x}{7} = 6$$

6.

$$\frac{4r}{3} = 12$$

7.

$$\frac{3y}{8} = 9$$

8.

$$\frac{2t}{9} = 6$$

9.

$$\frac{2h}{7} = 4$$

10.

$$\frac{7z}{2} = 14$$

11.

$$\frac{2f}{3} = 8$$

12.

$$\frac{3g}{8} = 9$$



SOLUTIONS CAN BE FOUND AT
THE END OF THE BOOKLET.

score 12

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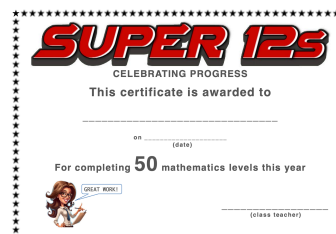
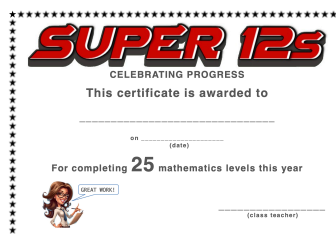
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MASTERY TEST

Teacher's signature

I'VE COMPLETED

LEVELS THIS YEAR



Solutions to Essential Revision

1. 8

3. $t = 51$

5. $x = 42$

7. $\blacksquare = 12$

9. $x = 8$

11. 10

2. $\blacksquare = 8$

4. $m = 11$

6. 16

8. $h = 25$

10. $y = 24$

12. $\blacksquare = 3$

Solutions to Questions

1. $x = 9$

3. $p = 6$

5. $x = 14$

7. $y = 24$

9. $h = 14$

11. $f = 12$

2. $y = 10$

4. $m = 21$

6. $r = 9$

8. $t = 27$

10. $z = 4$

12. $g = 24$