A close-up, shallow depth-of-field photograph of a computer keyboard. The central focus is on a single key marked with a white 'x', a vertical slash, and a hyphen. The surrounding keys, including those with blue markings and a plus sign, are blurred. The text 'Algebra - quadratics' is overlaid in white on the central key.

Algebra - quadratics

Expanding and factorising

Blue Zone



Going slow

E.g. sad, sick, tired,
bored

Green Zone



Good to go

E.g. happy, calm,
focused, ok

Yellow Zone



Caution

Starting to lose control

E.g. worried, excited,
annoyed

Red Zone



Stop!

Out of control

E.g. angry, terrified,
elated

When Co-Efficient's are not the same... (A Grade)

Hard!:

Solve: $2x + 3y = 30$ (1)

$$5x + 7y = 71 \text{ (2)}$$

**SAME SIGN
SUBTRACT**

Step 1: When neither co-efficient's are the same we may need to **multiply** both equations to make them the same...

Step 2: Eliminate the letter with the same co-efficient (*by SUBTRACTING in this question*)

Multiply equation (1) by x7

$$14x + 21y = 210 \text{ (3)}$$

We call this equation (3)

Multiply equation (2) by x3

$$15x + 21y = 213 \text{ (4)}$$

We call this equation (4)

$$\begin{array}{r} (4) \quad 15x + 21y = 213 \\ (3) \quad \underline{14x + 21y = 210} \\ \hline - \qquad \qquad \quad x \qquad \qquad = 3 \\ \qquad \qquad \qquad \text{So } x = 3 \end{array}$$

Now we solve using equation (3) & (4)

When Co-Efficient's are not the same...

Hard!: Solve: $2x + 3y = 30$ (1)
 $5x + 7y = 71$ (2)

Step 3: To find y , we substitute $x = 3$ back into one of the original equations (*equation 1*)

$$\begin{aligned}(2 \times 3) + 3y &= 30 \\ 6 + 3y &= 30 \\ (-6) & \\ 3y &= 24 \\ (\div 3) & \\ y &= 8\end{aligned}$$

Step 4: Check your answers using equation 2

$$x = 3, y = 8$$

$$\begin{aligned}(5 \times 3) + (7 \times 8) &= 71 \\ 15 + 56 &= 71 \\ 71 &= 71\end{aligned}$$



Activity - When Co-Efficient's are not the same...

1) Solve: $4x + 6y = 5$
 $3x + 4y = 4$

2) Solve: $3x + 2y = 11$
 $x - 5y = 1$

Activity - When Co-Efficient's are not the same...

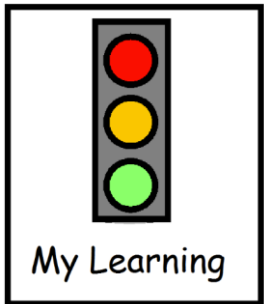
3) Solve: $4x - 3y = 14$
 $2x + 2y = -7$

4) Solve: $7x - 2y = 13$
 $4x - 3y = 13$

5) Solve: $5x + 4y = 5$
 $3x - 5y = -34$

6) Solve: $4x - 3y = 5$
 $2x + 2y = -1$

Extension: Zach has 10p and 20p coins in a jar.
There are a total of 18 coins which add up to £2.30.
Work out the number of 10p and 20p coins Zach has.



Traffic light your work today.

Thumbs down- I don't understand it

Thumbs across- I understand some of it

Thumbs up- I understand all of it

A further task will be on the website for you to complete later today – one merit for all who do

