

Quadratic Factoring Method Flowchart

Does the problem contain an equal sign?

Yes

Set the equation equal to zero, keeping a positive.

$$ax^2 + bx + c = 0$$

No

Write in standard form:

$$ax^2 + bx + c$$

Is there a Greatest Common Factor that can be divided out of each term?

Remember! If $a < 0$, factor out -1 .

Yes

Factor out the GCF (Cake Method):

$$n(ax^2 + bx + c)$$

No

Leave the equation the way it is:

$$ax^2 + bx + c$$

Does the remaining quadratic match a special factor pattern?

Difference of Squares or Perfect Square Trinomial

Yes

Factor using the pattern:

DOS: $m^2 - n^2 = (m + n)(m - n)$

PST: $m^2 + 2mn + n^2 = (m + n)^2$
 $m^2 - 2mn + n^2 = (m - n)^2$

No

Not sure?

The regular method will always work.

In $ax^2 + bx + c$, does $a = 1$?

Yes

Use "X" Method to factor, if possible:

$$\begin{array}{c} ac \\ \diagup \quad \diagdown \\ ? \quad ? \\ \diagdown \quad \diagup \\ b \end{array}$$

The "?"s must add to get the bottom number and multiply to get the top number

$$(x + ?)(x + ?)$$

Struggling to find the "?"s?

Plot1	Plot2	Plot3
V1=51/X		
V2=	X	V1
V3=		ERROR
V4=	0	51
V5=	1	51

No

Use "X" and Box Method to factor, if possible:

$$\begin{array}{c} ac \\ \diagup \quad \diagdown \\ ? \quad ? \\ \diagdown \quad \diagup \\ b \end{array}$$

ax^2	$?x$
$?x$	c

Take out the GCF of each row and column to find the factors and check your signs!

Does the problem contain an equal sign?

Yes

Set each factor equal to 0 and solve for x .

Substitute each answer into the original equation for x and verify that it makes a true statement.

No

Write as a product of prime factors.
Don't forget the GCF!

FOIL and/or distribute to check your answer.

