

Law breakers

Quadratic expressions

GARETH So, tell us about your detention with Terry 'Two Brackets' Jones.

JOHN Yeah, he would divide by 0 and hotwire calculators but ignoring the distributive law was the worst. Not just once, but again and again. He was relentless. All I did to get detention was set fire to the septic tank.

GARETH Yes, that's mild in comparison. Tell us about the distributive law, John. Ooh sorry, I said your name!

JOHN Yeah, look, here's two expressions, $5x - 4y$ and $2x + 3y$. I'll multiply them as two brackets.

Now, here's what Terry would do. I can do this.

He would multiply the $5x$ and $2x$ to get $10x^2$. Then he'd multiply the $-4y$ by $3y$ to get $-12y^2$.

GARETH Please, go on.

JOHN But that's just it, he wouldn't go on. He'd stop, put his pencil down and stare at you, saying "job done".

GARETH Oh, that's dreadful. Was this in room 11G with Mr Brydon? Ooh, more details sorry.

JOHN Sorry, I'm ok now. So, we've got $5x$ minus $4y$ times $2x + 3y$. The distributive law says take the $5x$ and multiply it by the second bracket and do the same for the $-4y$. Now we deal with each part. $5x$ times $2x$ is $10x^2$ and $5x$ times $3y$ is $15xy$.

The minus symbol belongs with the $4y$. We get $-4y$ times $2x$ is $-8xy$ and $-4y$ times $3y$ is $-12y^2$. We can simplify the like terms, the $15xy$ and the $-8xy$ to $7xy$ and now the whole thing becomes $10x^2 + 7xy - 12y^2$. That, is job done.

GARETH Oh yes, I see the difference.

JOHN The entire xy term is missing!

Bitesize

GARETH As we see, without the distributive law and other rules of algebra we would be in the dark ages.

JOHN Does this thing have internet? Uh, oh!

GARETH Quick! Cut!