

a Is $4(x + 2) = 4x + 8$ an equation or an identity? <i>identity</i> an identity: true for every value	b Is $x^2 = 2x$ an equation or an identity? <i>equation</i> an equation: true for some values	c Every prime number is odd. Give a counterexample. <i>2</i> a counterexample	d Find a so that $3(x + a) \equiv 3x + 12$ <i>$a = 4$</i> matching terms in an identity
e Find a and b so that $(x + a)^2 \equiv x^2 + 10x + b$ <i>$a = 5, b = 25$</i> matching the terms of a square	f n is an integer. Write an expression for any even number. <i>$2n$</i> an even number	g n is an integer. Write an expression for any odd number. <i>$2n + 1$</i> an odd number	h Write an expression for the next odd number after $2n + 1$ <i>$2n + 3$</i> consecutive odd numbers
i Write $n + (n + 1) + (n + 2)$ as a multiple of 3 <i>$3(n + 1)$</i> a sum shown to be a multiple	j Simplify $(n + 1)^2 - n^2$ <i>$2n + 1$</i> expanding to show a number is odd	k Write $(2n + 1)^2$ in the form $2(\dots) + 1$ <i>$2(2n^2 + 2n) + 1$</i> the square of an odd number is odd	l Simplify $(2n + 1)^2 - (2n - 1)^2$ <i>$8n$</i> the difference of two odd squares

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