

YOU & MATHS Which are divisors? Consider the polynomial $P(x) = 4x^2 + 5x - 6$. Which of the following polynomials are divisors of $P(x)$?

- a. $x + 1$
- b. $4x - 3$
- c. $x + 2$
- d. $x - 2$

You can immediately check polynomials **a**, **c**, and **d** by substituting x with -1 , -2 , 2 , respectively, in the polynomial $P(x)$. You get $P(-1) = 4 - 5 - 6 = -7$, $P(-2) = 16 - 10 - 6 = 0$, and $P(2) = 16 + 10 - 6 = 20$. So, by Ruffini's theorem you can conclude that $x + 2$, that is polynomial **c**, is a divisor of $P(x)$.

Then, dividing $P(x)$ by $x + 2$, you get $4x - 3$, and so you can conclude that $4x - 3$, that is polynomial **b**, is a divisor of $P(x)$.

	4	5	-6
-2		-8	6
	4	-3	0

Therefore the solutions are **b** and **c**.