7.2) Dividing polynomials

$$f(x) = 18x^4 - 29x^2 + 3$$

Divide $f(x)$ by $(3x + 1)$.

Give your answer in the form

$$f(x) = (3x+1)(ax^3 + bx^2 + cx + d)$$

$$f(x) = 4x^4 - 17x^2 + 4$$

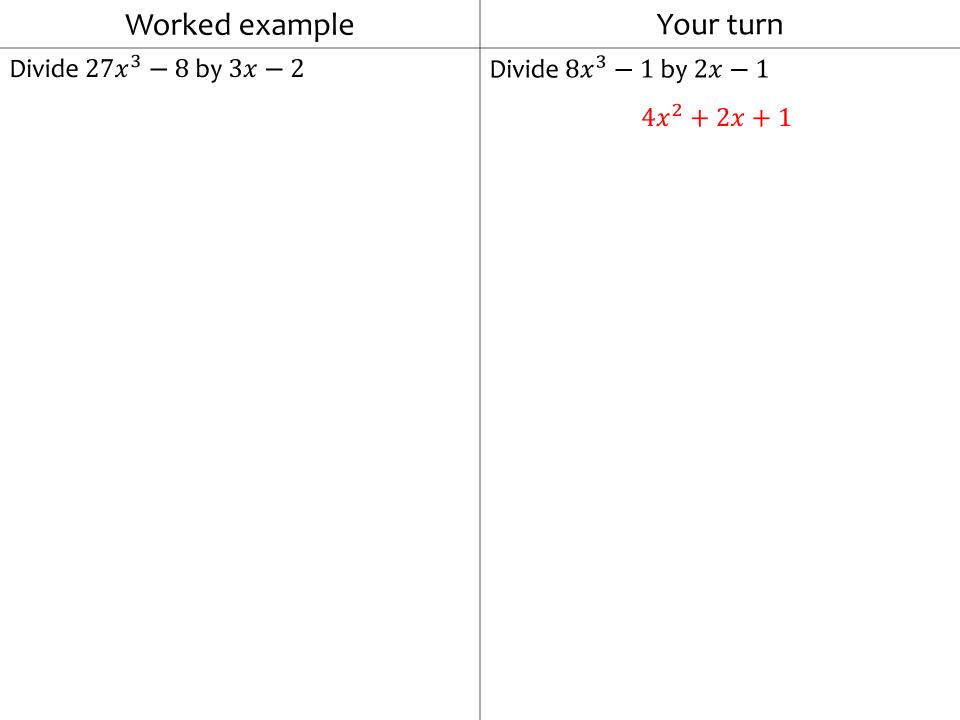
Divide f(x) by (2x + 1).

Give your answer in the form

$$f(x) = (2x + 1)(ax^3 + bx^2 + cx + d)$$

$$f(x) = (2x+1)(2x^3 - x^2 - 8x + 4)$$

Worked example	Your turn
Find the remainder when $2x^3 + 5x^2 - 10x + 16$ is divided by $(x - 2)$	Find the remainder when $2x^3 - 5x^2 - 16x + 10$ is divided by $(x - 4)$
	-6



 $f(x) = 6x^3 + 11x^2 - 46x + 24$ Show that (3x - 2) is a factor of f(x)and hence find all the real roots of the equation f(x) = 0

 $f(x) = 12x^3 - 14x^2 - 61x + 60$ Show that (2x - 3) is a factor of f(x)and hence find all the real roots of the equation f(x) = 0

$$x = -\frac{5}{2}$$
, $x = \frac{3}{2}$, $x = \frac{4}{3}$