Name: _____ 5-a-day Further Maths

**23rd February**

Corbettmaths

Work out

$$\frac{9}{4x^3} + \frac{5}{3x} - x^2$$

Give your answer as a single fraction in its simplest form

Solve the simultaneous equations

$$x - y + 3z = 5$$

$$x + y + 6z = 12$$

$$3x - 2y + 2z = 10$$

$y = x^4 - 2x^2$

Work out the value of $\frac{d^2y}{dx^2}$ when $x = -5$

Prove $n^3 - n$ is always divisible by 6.

n is an integer greater than 1.