d) We can use proof by contrapositive. This means if
$(\neg B) \Rightarrow (\neg A)$ is true then $A \Rightarrow B$ is true

$\therefore$ the statement becomes: if n is $\neg$ not even then $n^3 - n + 7$ is not even

which can further be simplified to: if n is odd then $n^3 - n + 7$ is odd $\therefore$

We assume n is odd ($2k+1$ for some integer k)

$n^3 - n + 7$

$\Rightarrow (2k+1)^3 - (2k+1) + 7$ ← sub $2k+1$ in for n

$\Rightarrow (2k+1)(4k^2+4k+1) - (2k+1) + 7$

$\Rightarrow (8k^3 + 12k^2 + 6k + 1) - (2k+1) + 7$

$\Rightarrow 8k^3 + 12k^2 + 4k + 7$

$\Rightarrow 2a + 12k^2 + 4k + 7$ ← let a be $4k^3$ (an integer)

$\Rightarrow 2a + 2b + 4k + 7$ ← let b be $6k^2$ (an integer)

$\Rightarrow 2(a + b + 2k + 3) + 1$

$\Rightarrow 2c + 1$ ← let c be $(a + b + 2k + 3)$ (an integer)

$\therefore$ The contrapositive is true so the original statement is true