$\boxed{\text{Case 4:}}$ $x=2a+1,\ y=2b+1\ \ z=2c+1$

$$x^2+y^2+z^2-7 = 4a^2+4a+4b^2+4b+4c^2+4c-4$$
$$= 4(a^2+a+b^2+b+c^2+c-1)$$

$\exists K_1 \in \mathbb{N}$ s.t. $a=2K_1$ or $2K_1+1$

$a=2K_1,\ a^2+a = 4K_1^2+2K_1 = 2(2K_1^2+K_1)$

$a=2K_1+1,\ a^2+a = 4K_1^2+4K_1+1+2K_1+1 = 2(2K_1^2+3K_1+1)$

$\therefore 2 \mid a^2+a$ or, $\exists K \in \mathbb{N}$ s.t. $a^2+a=2K$

Similarly, $\exists l \in \mathbb{N}$ and $m \in \mathbb{N}$ s.t. $b^2+b=2l$ and $c^2+c=2m$

$\therefore a^2+a+b^2+b+c^2+c-1 = (2K+2l+2m-2)+1 = \boxed{2(K+l+m-1)+1}$

$\therefore 2 \nmid a^2+a+b^2+b+c^2+c-1$

$\therefore 8 \nmid (x^2+y^2+z^2-7)$ (The rest of the cases are symmetrical)

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25) Three prime numbers p, q and r, all greater than 3, form an arithmetic progression: $p=p$, $q=p+d$, $r=p+2d$. Prove that d is div by 6.

$\because$ p, q and r are prime and are greater than 3, by the division algorithm p can be $6K_1+1$ or $6K_1+5$, q can be $6K_2+1$ or $6K_2+5$ and r can be $6K_3+1$ or $6K_3+5$, for some $K_1, K_2, K_3 \in \mathbb{N}$.

$\boxed{\text{Case 1:}}$ $p=6K_1+1,\ q=6K_2+1\ \ r=6K_3+1$

$6K_2+1 = (6K_1+1)+d \Rightarrow d = 6K_2-6K_1 = 6(K_2-K_1)$

$\therefore 6 \mid d$ $\quad r = 6K_3+1 = 6K_1+1+12(K_2-K_1) \rightarrow 6(2K_2-K_1)+1$

$= 6(K_2-K_1)+6K_2+1$

$= (6K_2+1)+\underline{d} = q+d$

$\boxed{\text{Case 2:}}$ $p=6K_1+1\ \ q=6K_2+1\ \ r=6K_3+5$

$q=p+d \Rightarrow 6K_2+1 = 6K_1+1+d \Rightarrow d = 6(K_2-K_1)$

$r=p+2d \Rightarrow 6K_3+5 = 6K_1+1+2d$

$= 6K_1+12(K_2-K_1)+1 = 6(2K_2-K_1)+1$