$$(\forall n \in Q)(\exists d \in Q)[n = 3d \vee n + 2 = 3d \vee n + 4 = 3d]$$

Or:

$$(\forall n \in Q)(\exists d \in Q)[n \pm 2 = 3d]$$

Suppose $(\forall n \in Q)(\exists d \in Q)[n \pm 2 \neq 3d]$. Or in other words we can find such n that for any d it holds $n \neq 3d \pm 2$. Let $d = 0$. Then $n = -2$ and $n = 2$, but they're integers. Contradiction. Hence for any $n = 3d \pm 2$ we could find a d such that $n \pm 2 = 3d$.
QED.