Let’s assume a hacker with a computer that operates with a processor that executes 100,000,000 instructions per sec, and has developed an algorithm to test passwords that would need 10 instructions.

Let’s also assume that the hacker already knows the ID of the victim and is aiming to conduct a brute force attack against all passwords.

How long should the victim make her/his password, using a combination of alphanumeric string, to ensure his/her account protection for 3 months?

Back up your answer with showing your calculations of the time it would take to crack a password of that length.