

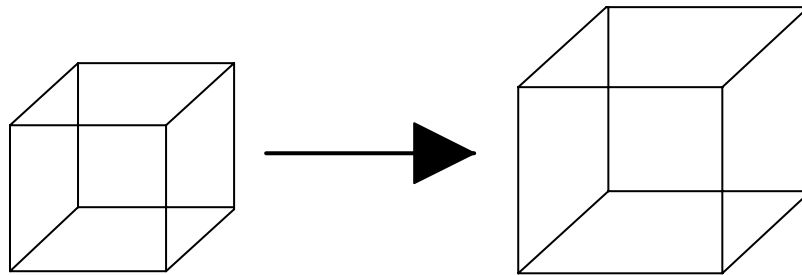


Neurological Nasties XII

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1. If the length of each edge of a cube is increased by 50% , what is the percentage increase of the surface area of the cube ?



2. General Killemall was inspecting his troops as they stood two abreast ready to march into battle. He was dismayed to find that there was one man left over. "That's odd," he muttered to himself, and not wanting to shoot the unfortunate loner, he ordered his men to reform in threes. But now things were worse than before - there were two men left over. When he tried fours, there were three left over. With fives there were four left over, with sixes, five over, with sevens, six over.

"Oh sugar," groaned the general, holding his head. "If it is this hard putting the men in formation, what is the fighting going to be like ?" It was all too much for him, so he deferred the battle until another day.



Now, knowing that there were not more than 800 troops on parade, exactly how many were there ?

3. Find a two-digit number such that the number itself subtract the sum of its digits equals 36. The sum of the digits plus the product of the digits equals the number subtract 8.