20   The IcePhone 3.14

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Challenge

For several years now, Santa has been annoyed by the fact that many children and adults wish for a new phone every Christmas, "That's such a waste! Not sustainable at all!" But many devices actually need to be replaced simply because they fall and break during everyday use. Therefore, Santa has instructed his research department to develop a new indestructible display. The research department at the North Pole is one of the most renowned in the world; so not surprisingly, after only a short time, the researchers are able to present Santa Claus with a phone with an almost unbreakable display made of ice crystal glass, called *Penguin Glass* in the technical jargon: the *IcePhone 3.14* is not only quite pretty, but also can survive falls from very high altitudes.

The research department wants to showcase the device to Santa Claus as spectacularly as possible and assigns two clever elves to determine the highest floor of the 141-story Polar Star Tower from which such a phone can fall without breaking. For experimentation purposes,

the research department provides them with two brand-new IcePhones. Of course, the same IcePhone can be dropped several times until it breaks. Since the two elves are brilliant, but not particularly fit, they want to solve the problem with as few drops as possible.

What is the minimum number of drops that is needed to determine the highest safe floor in worst case?

Possible answers:

1. 11
2. 12
3. 13
4. 14
5. 15
6. 16
7. 17
8. 18
9. 19
10. 20