8. [8 points] Archaeologists have discovered what seems to be scientific research papers near some dinosaur fossils. The papers talk about the "danger level", L, of a potential asteroid impact. From what they can read, the formula is given by

$$L = 3\log\left(\frac{4M}{k}\right)$$

where M is the mass of the asteroid, in kg, and k is a positive constant. For this problem, leave all your answers in **exact** form.

a. [4 points] Suppose an asteroid has a danger level of 7.5. What would the mass of the asteroid be? Your answer should include units, and may involve the constant k.

Mass = _____

b. [4 points] Let N be the danger level of an asteroid of mass $12A$ kg, and let n be the danger level of an asteroid of mass $5A$ kg, where A is a positive constant.
Compute $N - n$. Simplify your answer so that it does *not* include k or A.

$N - n$= _____

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