Prehistoric Cat Solution

The ratio of the leg bone of the prehistoric cat to that of the modern domestic cat is 10 to 3. A key statement is that the ancient adult cat had a build similar to that of a modern domestic cat. Care must be taken to realize that this is not a one-dimensional change. Since the cats have a similar build, the width and height also changed in approximately the same 10-to-3 ratio of the bone lengths. In essence, the growth rate of 10/3 occurs three times. Consequently, the computation involves raising 10/3 to the third power. The computation yields $1,000/27$, which is approximately 37.04. Thus, the prehistoric cat was about 37 times larger than a modern domestic cat.

For students to get to this level of proportional reasoning, what prerequisite knowledge (concepts, skills, etc.) must they have to solve this type of problem? List the prerequisite knowledge below.

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\text{List prerequisite knowledge here.}
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