

Box Brevity

Name: _____

Date: _____



Two Math Cats

1. Orange and Grey, like many cats, love boxes. However, Orange will only play in boxes that are between 11 and 21 ft³. On the other hand, Grey will only play in boxes between 6 and 16 ft³. Help them determine whether or not they will want to play in these boxes.

Box	Dimensions (ft)	Volume (ft ³)	Orange	Grey
1	1 x 2 x 3	1 x 2 x 3 = 6	no	yes
2	2 x 2 x 3			
3	1.5 x 5 x 2			
4	3 x 3 x 2			

Orange and Grey should get box number _____.

2. Orange and Grey are playing with a 1 x 1 x 2 box when they suddenly feel the urge to do some math. Help the cats calculate how many times greater the box's volume will be if all the sides are multiplied by:

- a. 2 The 1 x 1 x 2 becomes 2 x 2 x 4, or 16. It will be **8** times larger.
- b. 3
- c. 5
- d. 2.5

Do you notice a pattern?

3. Orange and Grey are doing a number challenge. One cat will come up with a volume, and the other will come up with the dimensions for such a box. For a correct solution, each side must be an integer greater than 1. Help them find some dimensions!

Goal Volume	Possible* Dimensions
24	2 x 3 x 4
36	
48	
60	
100	

Goal Volume	Possible* Dimensions
125	
210	
231	
343	
1001	

*Other solutions may exist. Giving one solution is fine.