

Quiz 1 review **answer key** Name: _____

This flat pattern can be folded on the dashed lines to make a box.

1. What will the surface area of the box be?

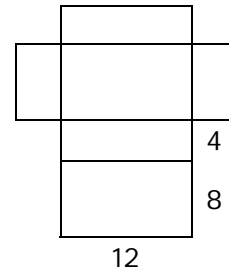
$$(12 \times 8 + 8 \times 4 + 12 \times 4) \times 2 =$$

$$(96 + 32 + 48) \times 2 =$$

$$(176) \times 2 = \mathbf{352 \text{ un}^2}$$

2. What will the volume of the box be?

$$12 \times 8 \times 4 = \mathbf{384 \text{ un}^3}$$



Sweet Tooth Chocolates is marketing a special assortment of caramels. They want to put 18 individual caramels in a box. Each caramel is 1 cubic inch.

3. List all the ways 18 caramels can be neatly packaged into a box (4 ways).

$$1 \times 1 \times 18$$

$$1 \times 3 \times 6$$

$$1 \times 2 \times 9$$

$$2 \times 3 \times 3$$

Order of the numbers does not matter

4. Which arrangement of caramels would require the most cardboard for the box? **$1 \times 1 \times 18$ because it is the most stretched out**

5. Which arrangement of caramels would require the least cardboard for the box? **$2 \times 3 \times 3$ because it is the closest to a cube, or the sum of the numbers is the least, or the difference between the highest and lowest number is the least.**

6. On grid paper draw a flat pattern for the box you described in question 5. **Many different possibilities, one is drawn below.**

