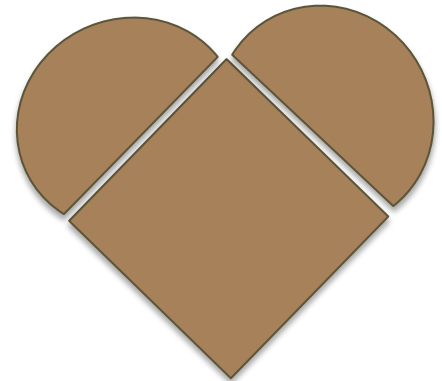


I'm going to build a **Raspberry-chocolate heart cake**. Yummmm.



Here's my plan. I'm going to bake a square cake and a round cake and arrange them as I've shown below.

1. Give me some possible dimensions or measurements for circle and square pairs that I can use together to make this heart shaped cake.



This will be a two layer cake with raspberry filling, chocolate icing and will be topped with whole raspberries.

We found this information about servings per cake and approximate batter quantities needed. (Each pan should be filled to the same depth.)

2 in. deep pans	Pan size	Servings per 2 layer cake	Cups batter for 1 layer	Approx. cups icing to frost & decorate 2 layer cake
Round	6" (diameter)	12	2 1/4	2 1/2
Square	6"(side length)	16	3	3 1/2

I need to bake a larger version of this cake! I need your help to come up with two different larger versions of this heart cake. Be sure to tell me:

- What dimensions you will use?
- What the base area or volume of this cake will be?
- How many people should it serve and how do you know?
- How many cups of batter will you need?
- How much frosting?

I have circular and square pans in sizes 8, 10, 12, 14 and 16 inches, so you may use any of those dimensions.

Cake #1

2 inch deep pan	Pan size - round diameter or square side	Base area of total cake	Servings per 2 layer cake	Cups of batter required for 1 layer	Approx. cups of icing to frost 2 layer cake
Round					
Square					
	Total for cake				

Cake #2

2 inch deep pan	Pan size - round diameter or square side	Base area of total cake	Servings per 2 layer cake	Cups of batter required for 1 layer	Approx. cups of icing to frost 2 layer cake
Round					
Square					
	Total for cake				

Reflections:

2. Look back at how you determined the base area or volume for your two larger cakes. What math were you doing to figure out the base area or volume of the heart cake? What formula could you use to find the base area or the volume of any heart shaped cake?

3. Will a cake made from a 12-inch square pan and a 12 inch diameter circular pan make twice as much cake as a cake made from a 6 inch square pan and a 6 inch diameter circular pan? Explain your thinking.

4. As we increased the side of the square and the diameter of the circle by two inches each, how did the base area or volume of the total cake change? Did it go up by a constant rate or did it grow in some other way? Please explain.