

Problem PIZZADEL: Pizza Delivery

It is a very old tradition to serve pizza buns at the local programming contests at the FAU. It is not only important for the survival of the contestants, but also a good way to attract freshman students.

A common recipe¹ (for three persons) is:

Ingredients

amount		item
metric	imperial	
200 g	$\frac{1}{2}$ lb	diced ham
200 g	$\frac{1}{2}$ lb	diced salami
200 g	$\frac{1}{2}$ lb	sliced mushrooms
200 g	$\frac{1}{2}$ lb	chopped sweet pepper
200 g	$\frac{1}{2}$ lb	grated mozzarella cheese
200 ml	1 cup	cream
		oregano
		garlic powder
	9	buns



Figure 1: Why not have some tasty pizza buns now?

Directions

1. Mix all ingredients together and let it steep for about half an hour. Meanwhile slice the buns in half.
2. Apply the mixture onto the halves and place the buns on a cookie sheet. Heat the oven to 350 degrees F (175° C). Bake the buns for about 15 minutes.
3. Enjoy your meal!

But this challenge is not about making pizza buns, but rather delivering them to your team.

At the moment, you have a bit of spare time (otherwise you would not have read the recipe) and you decide to fetch some pizza buns for your team.

After arriving at the buffet, you see several plates with different diameters and you want to know how many of the buns will fit onto each of them – without overlapping themselves. For beauty reasons you want every bun to be in contact with the rim of the plate (but without overhanging). And, of course, you do not want to stack them, otherwise the sticky toppings will glue them together.

As the the pizza bun bakery will change in future contests and, hence, the new buns may have a different dimension, you naturally want to find a generic algorithm to solve the problem at hand.

Don't forget: neither you nor one of your teammates will eat more than three pizza buns at once (and you do not want to let them cool down), so you will never take more than nine buns.

You can assume that both the plates and the buns have a perfect round shape.

Input

The input starts with the number of test cases t ($t < 100$). Each of them consists of two integers b and p (with $0 < b, p \leq 500$), the diameter in millimeters of bun and plate.

Output

For each test case print one line containing the maximum number of buns you can put onto the plate. Remember: you will never take more than nine buns.

Sample Input 1

```
2
80 180
70 270
```

Sample Output 1

```
3
8
```

¹This is **not** the top secret *Chair of Computer Science 2*-recipe – it (and its image) is taken from <http://www.chefkoch.de/rezepte/432351134416557/Superschnelle-Pizzabroetchen.html>