



Petals Around The Rose

Dice Puzzle

The answer is 6

This is a famous dice puzzle involving some famous people (like Bill Gates) who were some of the major players during the early days of the developments in computer programming. Mark James, the Seer of Comex at USC invented the puzzle and Lloyd Borrett has kept it alive.

The name of the game is Petals Around the Rose, and that name is significant.

You roll 5 dice and I tell you the answer for that roll. You continue to roll 5 dice and I continue to tell you the answer for each roll until you can tell me how I am getting the answers.

The name of the game is Petals Around the Rose, and that name is significant.

What is the rule used to get the answer if the answers for each of the 4 rolls below are given?



The answer is fourteen.



The answer is zero.



The answer is four.



The answer is four again.

The amazing story behind the puzzle

<http://www.borrett.id.au/computing/petals-bg.htm>

In the September -October 1977 edition of "Personal Computing" magazine, Henry Gilroy provided the following report. It was June 1977, the very early days of the microcomputer industry. The founders of Microsoft, Bill Gates and Paul Allen, some Personal Computing writers and a couple of MITs folks were among those heading home to Albuquerque from the National Computer Conference in Dallas. Henry Gilroy provided the following brain teaser. He started by saying "The name of the game is Petals Around the Rose, and that name is significant. You will throw 5 dice as many time as need to find the rule. I will tell you the answer for every throw of the dice. And that's all the information they get.

One of the Microsoft members rolled the five dice and Henry gave the answer

Roll #1.



The answer is fourteen.

"The answer is what?" says the new player. "14." "On that roll?" "Yes." "Would it still be two if I just rearranging the pattern?" Henry replied "I can tell you only the name of the game and then give you the answer for any particular throw. In this case the answer is 14."

"So that's how it is. What am I supposed to do?" "You're supposed to tell me the answer before I tell you. I'll give you all the time you want, but don't tell me your theory, just the answer. If you figure it out, you don't want to give the idea away to these other jokers around you. Make them work for the answers, too. If you get the answer right on six successive rolls, I'll take that as prima facie evidence that you understand the game."

"OK, roll again."

Roll #2.



The answer is zero.

"I give up. "Roll again."

Roll #3.



The answer is four.

Roll #4.



The answer is four again.

By this time half a dozen people are sitting on the floor around the snorting and guffawing in disgust while guessing consistently wrong on the answers. Security types stop occasionally to give steely glances at the proceedings, and waiting strangers stop reading to listen to the discussion. Some blush at the language. Some people, like Personal Computing's Marketing Coordinator, Louise, catch on in half a dozen rolls, shrugging the whole thing off as trivial. Mark James, the Seer of Comex at USC who gave us the game in the first place, observes that many brilliant, learned folk who visit him and subject themselves to this, depart hours later without the answer. Many draw sketches of the throws and carry the sketches off to laboratories for study. Weeks later, they may call Comex with proposed answers based on computer analyses of the puzzle. The answers proposed are more often wrong than right. Petals Around the Rose may be almost as great a drag on the national economy as Star Trek.

Roll #5



The answer is 6.

"Six? It can't be!" That shoots my last two algorithms! Gimme a piece of paper so I can work on this. Let me list everything. The name of the game is Petals Around the Rose?" "Can I roll the dice myself or do you have to do it?" "Oh, you're welcome to roll them."

Roll #7.



"Is the answer 2? "No, it's 6." "Well, it can't be very complicated or you wouldn't be able to spit out the numbers so fast.

Roll #8.



The answer is sixteen.

"Wait, we haven't gone that high before. I thought the upper limit was 14." How high can it go?" I can tell you three things...

After takeoff, it was possible to throw the dice on a fold-down table while leaning over the back of a seat. Seven people watched without too much trouble. Rich Weiland caught on after another half hour. Paul Allen's neck got stiff fairly soon and he gave up to read his book. Bill Gates hung on grimly. Funny thing about Bill, he began to get answers right, but not consistently. He admitted that he was remembering throws he'd seen before, along with the answers, but had no plausible theory to account for answers. Remembering?

"Oh, sure," he said, "Like this throw... Roll #59.



The answer is six.

... it's just like a roll we saw earlier. Bill must have had two dozen rolls, with answers, committed to memory by the time this discussion came up. He had taken leave of his undergraduate courses at Harvard to lead this little company, Microsoft, which is creating BASIC and FORTRAN. They had no applications software in their product line yet, just system packages that are making them famous and may at length make them rich. "I think I'd better use a piece of paper," said Bill, who was by this time the only active player who had still failed to divine the secret. "Aha," said he after about an hour and a half of this foolishness. "The answer is four on this roll." "Yes." "The answer is six on this roll." Yes. And the answer to this is ten. Yes. He rattled off the next dozen answers without a quiver, declaring that he wasn't just remembering history now but knew what was going on. Like the others he didn't feel cheated by the game, but was satisfied that his effort paid off.

When you go through this at Comex and finally get the answer, a committee forces you to kneel in the middle of the floor so you can be sworn in as a member of the Fraternity OF the Petals Around The Rose. (Look it up on the web) while somebody taps you on the shoulders with a piece of wood. Certain people tend to be kissed during the process. I was struck smartly with a blackboard pointer. Comex even hands out a nice printed card. We didn't try all this on the airplane.

The game works well with real dice. Comex reports that one major convention was largely disrupted when they arranged for the gift shop at the hotel to stock a large supply of dice, then

introduced Petals Around the Rose to many conference attendees. "It was amazing," says Mark, "distinguished looking ladies and gentlemen in neat business clothes could be seen crawling on their hands and knees in little working groups all over the hotel. While speakers were saying important things on lecture platforms, the rattle of dice and mutterings about answers almost drowned them out from all over the dimly lit halls. We don't like to do this too often. Makes enemies."

Even the Microsoft guys agreed that Petals Around the Rose offers a good excuse for doing a bit of applications software. Indeed, Bill scratched out a program for the game on a napkin and passed it over the seat so that it could see daylight in Personal Computing. Figure it out and write the program yourself. However, we'll give you one line of Bill's program as it is written in pencil on the napkin (which is safe in our vault for evidence). Bill's written program makes us feel much better about dealing with a smart guy who can not only program but can remember all those throws of the dice. Things do even out. The line reads:

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PRINT "THE NAME OF THE GAME IS PEDAL AROUND THE ROSES"
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No wonder he was having trouble.

No More "Hello World"

Using the above article back in 1977 whilst working at BHP. Lloyd Borrett wrote a program in BASIC on a Data General minicomputer to introduce Petals Around the Rose to Australia. Since then it's been the first program written in each new language and operating environment Lloyd has worked on. In 1978 it was his first FORTRAN program and in 1979 his first Pascal program. In 1982, Petals Around the Rose was written in ROM BASIC to run on one of the first IBM PCs in Australia, which had a massive 64 Kb of RAM! It's been the first program he wrote using the IBM BASIC and Microsoft QuickBASIC compilers, plus the Borland Turbo C and C++ compilers. Later, it became his first Microsoft Windows program using Microsoft Visual BASIC.

So in 1996, Petals Around the Rose had to be the first Internet related program he would write. Hence the VBScript version using the ActiveX HTML Layout control for use with Microsoft Internet Explorer. And then a few weeks later he came out with a JavaScript version for use with Netscape Navigator v3. It's now more than a thirty year tradition. And it's much more fun than the standard 'Hello World' program. But will Lloyd ever do a Java Applet, C# or PHP version? Who knows!