BIS 420 PROGRAMMING FOR DATA SCIENCE
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CHAPTER 5 EXERCISE 5.3
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Fermat's Last Theorem says that there are no positive integers a, b, and c such that

an + bn = cn

for any values of n greater than 2.

1. Write a function named check_fermat that takes four parameters—a, b, c and n—and that checks to see if Fermat's theorem holds. If n is greater than 2 and it turns out to be true that
an + bn = cn

   the program should print, "Holy smokes, Fermat was wrong!" Otherwise the program should print, "No, that doesn't work."

2. Write a function that prompts the user to input values for a, b, c and n, converts them to integers, and uses check_fermat to check whether they violate Fermat's theorem

Ans:

```
def check_fermat(a, b, c, n):
    if n > 2 and a**n + b**n == c**n:
        print("Holy smokes, Fermat was wrong!")
    else:
        print("No, that doesn't work.")


def prompt_fermat():
    a = int(input("Enter value for a: "))
    b = int(input("Enter value for b: "))
    c = int(input("Enter value for c: "))
```

n = int(input("Enter value for n: "))

    check_fermat(a, b, c, n)

prompt_fermat()

```
1     def check_fermat(a, b, c, n):
2         if n > 2 and a**n + b**n == c**n:
3             print("Holy smokes, Fermat was wrong!")
4         else:
5             print("No, that doesn't work.")
6
7     def prompt_fermat():
8         a = int(input("Enter value for a: "))
9         b = int(input("Enter value for b: "))
10        c = int(input("Enter value for c: "))
11        n = int(input("Enter value for n: "))
12        check_fermat(a, b, c, n)
13
14    prompt_fermat()
```