Problem 628: Maximum Product of Three Numbers

Problem Information

Difficulty: Easy
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

Given an integer array

nums

,

find three numbers whose product is maximum and return the maximum product

.

Example 1:

Input:

nums = [1,2,3]

Output:

6

Example 2:

Input:

nums = [1,2,3,4]

Output:

24

Example 3:

Input:

nums = [-1,-2,-3]

Output:

-6

Constraints:

3 <= nums.length <= 10

4

-1000 <= nums[i] <= 1000

Code Snippets

C++:

```
class Solution {
public:
int maximumProduct(vector<int>& nums) {

}
};
```

Java:

```
class Solution {
public int maximumProduct(int[] nums) {

}
}
```

Python3:

```
class Solution:
def maximumProduct(self, nums: List[int]) -> int:
```

Python:

```
class Solution(object):
def maximumProduct(self, nums):
"""
:type nums: List[int]
:rtype: int
"""
```

JavaScript:

```
/**
* @param {number[]} nums
* @return {number}
*/
var maximumProduct = function(nums) {

};
```

TypeScript:

```
function maximumProduct(nums: number[]): number {

};
```

C#:

```
public class Solution {
public int MaximumProduct(int[] nums) {

}
}
```

C:

```
int maximumProduct(int* nums, int numsSize) {

}
```

Go:

```
func maximumProduct(nums []int) int {

}
```

Kotlin:

```
class Solution {
fun maximumProduct(nums: IntArray): Int {

}
}
```

Swift:

```
class Solution {
func maximumProduct(_ nums: [Int]) -> Int {

}
}
```

Rust:

```
impl Solution {
pub fn maximum_product(nums: Vec<i32>) -> i32 {

}
}
```

Ruby:

```
# @param {Integer[]} nums
# @return {Integer}
def maximum_product(nums)

end
```

PHP:

```
class Solution {

/**
* @param Integer[] $nums
* @return Integer
*/
function maximumProduct($nums) {

}
}
```

Dart:

```
class Solution {
int maximumProduct(List<int> nums) {

}
}
```

Scala:

```
object Solution {
def maximumProduct(nums: Array[Int]): Int = {

}
}
```

Elixir:

```
defmodule Solution do
@spec maximum_product(nums :: [integer]) :: integer
def maximum_product(nums) do

end
end
```

Erlang:

```
-spec maximum_product(Nums :: [integer()]) -> integer().
maximum_product(Nums) ->
.
```

Racket:

```
(define/contract (maximum-product nums)
(-> (listof exact-integer?) exact-integer?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public:
int maximumProduct(vector<int>& nums) {

}
};
```

Java Solution:

```
/**
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public int maximumProduct(int[] nums) {

}
}
```

Python3 Solution:

```
"""
Problem: Maximum Product of Three Numbers
Difficulty: Easy
Tags: array, math, sort

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
"""

class Solution:
def maximumProduct(self, nums: List[int]) -> int:
# TODO: Implement optimized solution
pass
```

Python Solution:

```
class Solution(object):
def maximumProduct(self, nums):
"""
:type nums: List[int]
:rtype: int
"""
```

JavaScript Solution:

```
/**
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
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* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

/**
```

```
* @param {number[]} nums
* @return {number}
*/
var maximumProduct = function(nums) {

};
```

TypeScript Solution:

```
/**
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
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*/

function maximumProduct(nums: number[]): number {

};
```

C# Solution:

```
/*
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

public class Solution {
public int MaximumProduct(int[] nums) {

}
}
```

C Solution:

```c
/*
* Problem: Maximum Product of Three Numbers
* Difficulty: Easy
* Tags: array, math, sort
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
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*/

int maximumProduct(int* nums, int numsSize) {

}
```

Go Solution:

```go
// Problem: Maximum Product of Three Numbers
// Difficulty: Easy
// Tags: array, math, sort
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

func maximumProduct(nums []int) int {

}
```

Kotlin Solution:

```kotlin
class Solution {
fun maximumProduct(nums: IntArray): Int {

}
}
```

Swift Solution:

```swift
class Solution {
func maximumProduct(_ nums: [Int]) -> Int {
}
}
```

Rust Solution:

```
// Problem: Maximum Product of Three Numbers
// Difficulty: Easy
// Tags: array, math, sort
//
// Approach: Use two pointers or sliding window technique
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impl Solution {
pub fn maximum_product(nums: Vec<i32>) -> i32 {

}
}
```

Ruby Solution:

```
# @param {Integer[]} nums
# @return {Integer}
def maximum_product(nums)

end
```

PHP Solution:

```
class Solution {

/**
* @param Integer[] $nums
* @return Integer
*/
function maximumProduct($nums) {

}
}
```

Dart Solution:

```
class Solution {
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Scala Solution:

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object Solution {
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defmodule Solution do
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