

Stack

Call Method with
Value Types Arguments

```
static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
    for(int i=0; i<b; i++)
    {
        res *= a;
    }

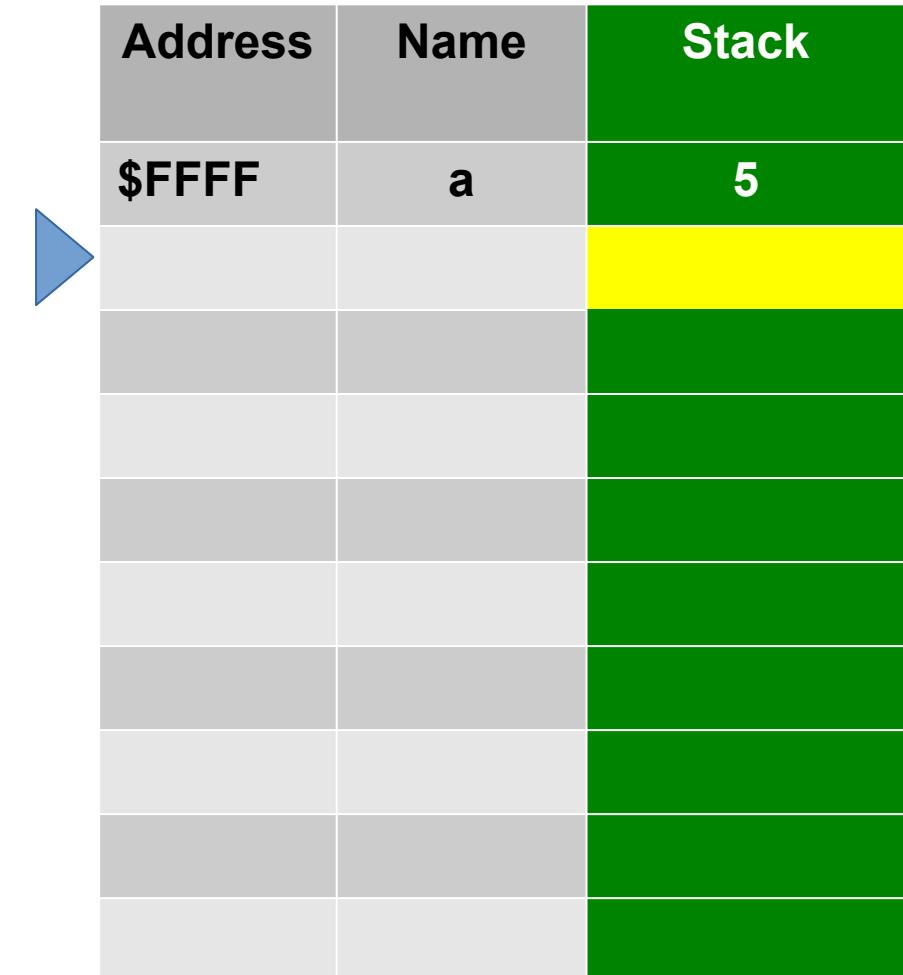
    return res;
}
```



```
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{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
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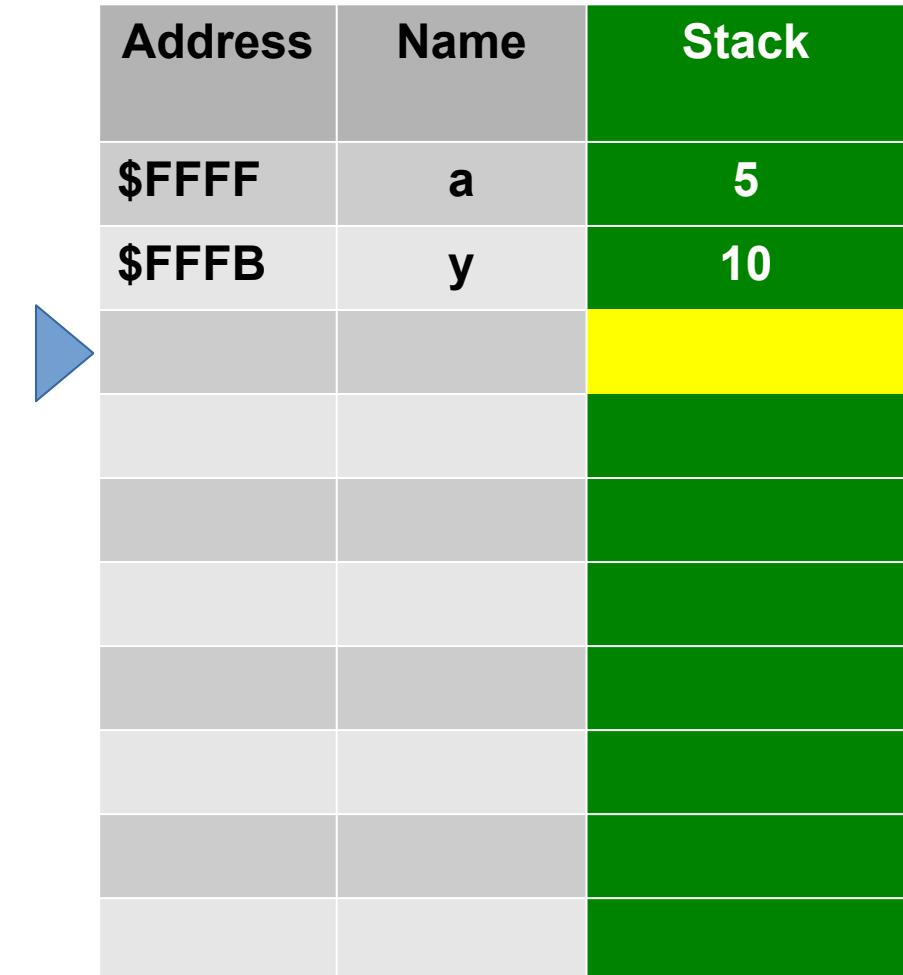
    return res;
}
```



```
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{
    int a = 5, y = 3, result;
    result = pow(a, y);
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static int pow(int a, int b)
{
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    for(int i=0; i<b; i++)
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        res *= a;
    }

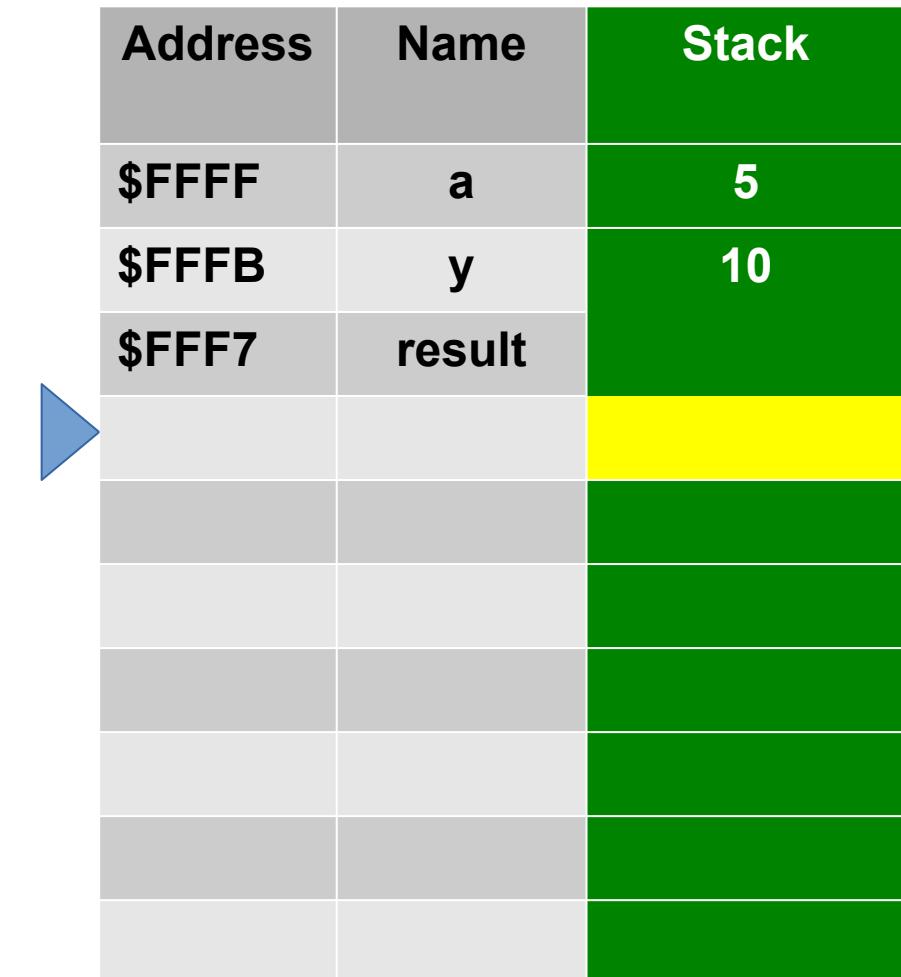
    return res;
}
```



```
static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
    for(int i=0; i<b; i++)
    {
        res *= a;
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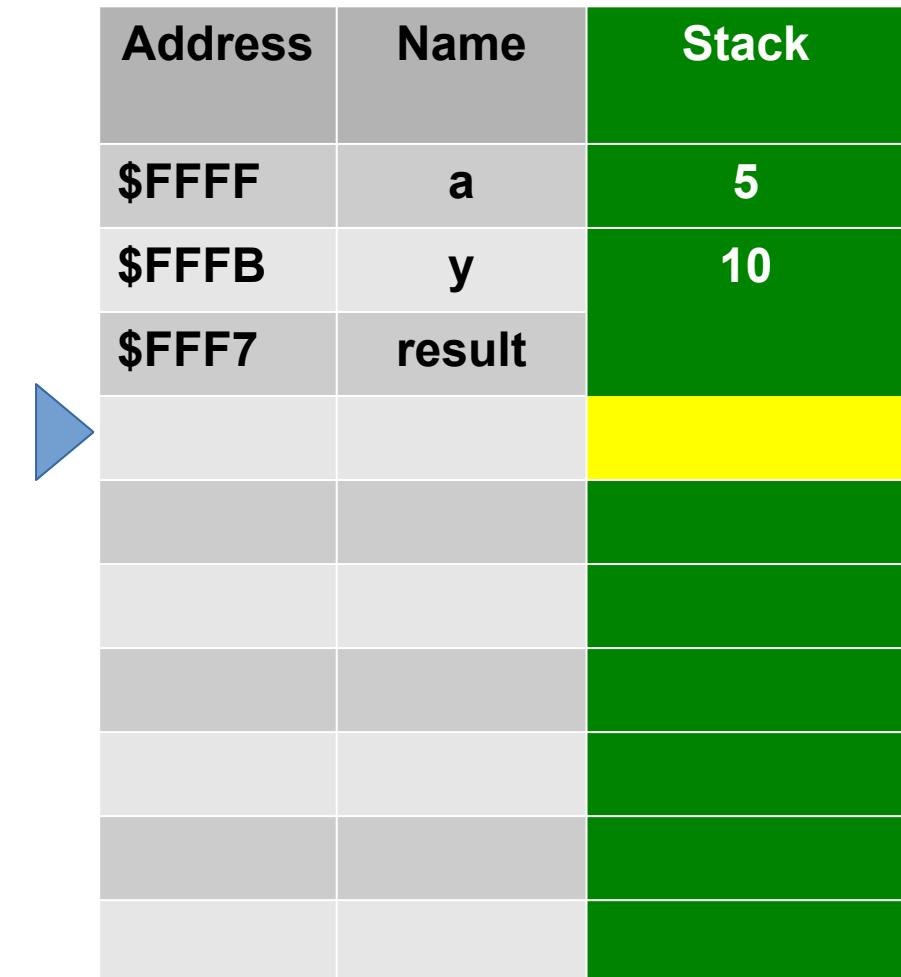
    return res;
}
```



```
static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
    for(int i=0; i<b; i++)
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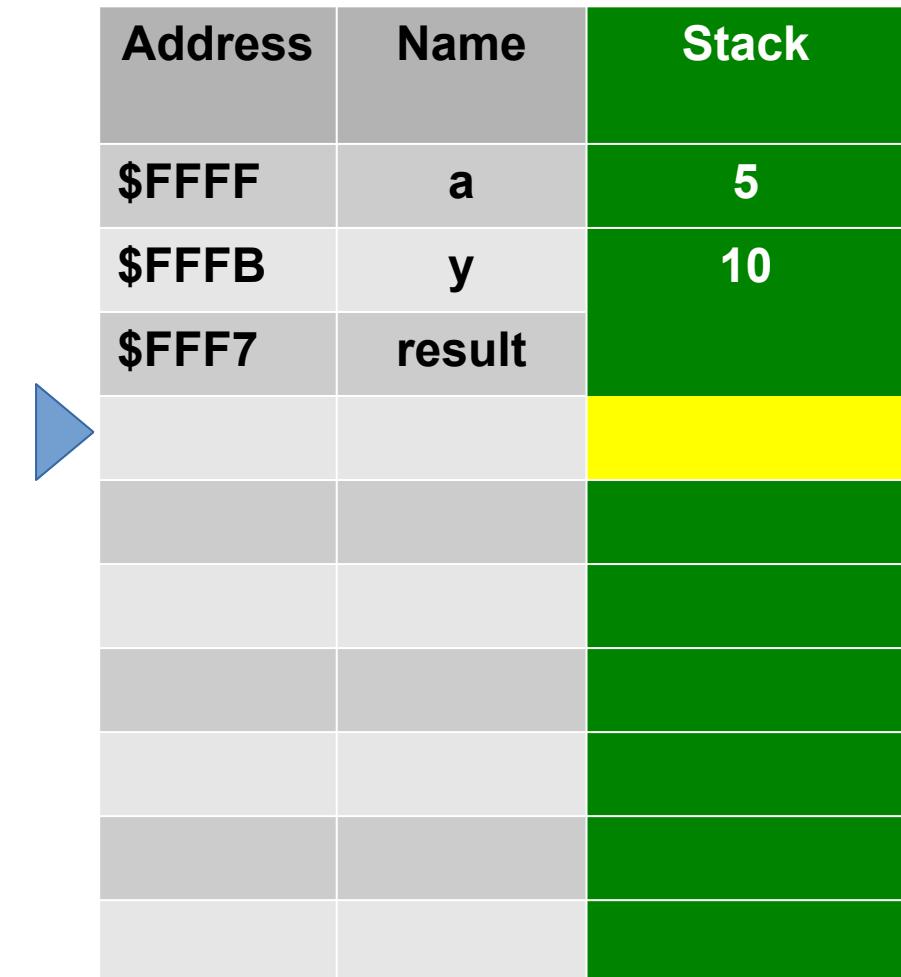
    return res;
}
```



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static int pow(int a, int b)
{
    int res = 1;
    for(int i=0; i<b; i++)
    {
        res *= a;
    }

    return res;
}

```

Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	10
\$FFF7	result	



```
static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
    for(int i=0; i<b; i++)
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```



Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	10
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	

```

static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	10
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3

```

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{
    int a = 5, y = 3, result;
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```



Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	10
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3

```

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{
    int a = 5, y = 3, result;
    result = pow(a, y);
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    for(int i=0; i<b; i++)
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```



Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFE8	Return address	\$FFF7

```

static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	1

```

static int Main()
{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	1
\$FFE3	i	0

```

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{
    int a = 5, y = 3, result;
    result = pow(a, y);
}

static int pow(int a, int b)
{
    int res = 1;
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\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	1
\$FFE3	i	0

```

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    int a = 5, y = 3, result;
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\$FFFF	a	5
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	1
\$FFE3	i	0

```

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Address	Name	Stack
\$FFFF	a	5
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	1
\$FFE3	i	0

```

static int Main()
{
    int a = 5, y = 3, result;
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	0

```

static int Main()
{
    int a = 5, y = 3, result;
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	0

```

static int Main()
{
    int a = 5, y = 3, result;
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static int pow(int a, int b)
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    int res = 1;
    for(int i=0; i<b; i++)
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    return res;
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```



Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFE9	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	1

```

static int Main()
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    int a = 5, y = 3, result;
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}

static int pow(int a, int b)
{
    int res = 1;
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Address	Name	Stack
\$FFFF	a	5
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFE9	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	1

```

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{
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}

static int pow(int a, int b)
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	1

```

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\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	5
\$FFE3	i	1

```

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```



Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	25
\$FFE3	i	1

```

static int Main()
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\$FFEB	Return address	\$FFF7
\$FFE7	res	25
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Address	Name	Stack
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\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	25
\$FFE3	i	2

```

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Address	Name	Stack
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\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	25
\$FFE3	i	2

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Address	Name	Stack
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	25
\$FFE3	i	2

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\$FFEF	b	3
\$FFEB	Return address	\$FFF7
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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFEB	Return address	\$FFF7
\$FFE7	res	125
\$FFE3	i	2

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\$FFF3	a	5
\$FFEF	b	3
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\$FFE7	res	125
\$FFE3	i	3

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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFE9	Return address	\$FFF7
\$FFE7	res	125
\$FFE3	i	3

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static int Main()
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\$FFF7	result	
\$FFF3	a	5
\$FFEF	b	3
\$FFE9	Return address	\$FFF7
\$FFE7	res	125
\$FFE3	i	3

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Address	Name	Stack
\$FFFF	a	5
\$FFFB	y	3
\$FFF7	result	
\$FFFA	a	5
\$FFEF	b	3
\$FFE9	Return address	\$FFF7
\$FFE7	res	125
\$FFE3	i	3

The diagram illustrates the state of the stack during the execution of the `pow` function. The stack grows from high addresses to low addresses. A blue arrow points to the `result` variable at address \$FFF7, which contains the value 125. A green circle highlights the `Return address` at address \$FFE9, containing the value \$FFF7, indicating the address where control will return after the function call.

```

static int Main()
{
    int a = 5, y = 3, result;
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