

```
/*
```

Program to Find Value of sin(x) using Expansion Series Given Below:

$$\sin(x) = x - x^3/3! + x^5/5! - x^7/7! + \dots$$

```
*/
```

```
#include <stdio.h>
```

```
#include <math.h>
```

```
main()
```

```
{
```

```
    float base, pwr, sum, c=1, m=2, i=3, g, h;
```

```
    printf("\nEnter the base value: ");
```

```
    scanf("%f", &base);
```

```
    printf("\nEnter the power value: ");
```

```
    scanf("%f", &pwr);
```

```
    sum = base;
```

```
ab:
```

```
    m = m * i;
```

```
    h = pow(-1, c);
```

```
    g = pow(base, i);
```

```
    sum = sum + (h * g) / m;
```

```
    i = i + 2;
```

```
    c++;
```

```
    m = m * (i - 1);
```

```
    if (i <= pwr)
        goto ab;

    printf("\n\nSum = %f", sum);
    getch();
}
```