

```
/*
```

```
A program to find out the interpolation of tan (x) at the point 1.3.
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```
This program is created by Mohammad Sazzad Hossain.
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```
*/
```

```
# include <iostream.h>
```

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

```
float product (float num1, float num2, float num3, float num4){return (num1 - num2) / (num3 - num4);}
```

```
int main (){
```

```
float x[5] = {-1.5, -.75, 0, .75, 1.5}, f[5], p[5];
```

```
float xm = 1.3, fm = 0;
```

```
int j = 0, i;
```

```
for (i = 0; i < 5; i++){
```

```
f[i] = tan (x[i]);
```

```
cout << "x[" << i + 1 << "] = " << x[i] << "\t f[" << i + 1 << "] = " << f[i] << endl;
```

```
}
```

```
do {
```

```
i = 0;
```

```
p[j] = 1;
```

```
do {
```

```
if (i != j)
```

```
p[j] *= product (xm, x[i], x[j], x[i]);
```

```
i++;
```

```
}while (i < 5);
```

```
j++;
```

```
}while (j < 5);
```

```
for (i = 0; i < 5; i++)
```

```
fm += f[i] * p[i];
```

```
cout << "At x = 1.3 f = " << fm << endl;
```

```
return (0);
```

```
}
```