

```
def f(x):
```

```
    return x**5 - 2*x**4 + 3*x**3 + 9*x**2 - 5*x + 7
```

```
p0 = float(input("Enter initial approximation for the root (p0): "))
```

```
coefficients = [float(input(f"Enter coefficient a{i}: ")) for i in range(6)]
```

```
iterations = int(input("Enter number of iterations: "))
```

```
count = 1
```

```
while count <= iterations:
```

```
    b = [coefficients[0]]
```

```
    for i in range(1, 6):
```

```
        b.append(coefficients[i] + p0 * b[i - 1])
```

```
    c = [b[0]]
```

```
    for i in range(1, 5):
```

```
        c.append(b[i] + p0 * c[i - 1])
```

```
p1 = p0 - (b[-1] / c[-1])
```

```
print(f"Iteration {count}: New root approximation = {p1:.6f}")
```

```
p0 = p1
```

```
count += 1
```