

→ Large Exponentiation With E7F & Euler's
Theorem (code): 51

```
CONST INT M = 1e9 + 7;
```

```
LL BINEXP(LL A, LL B, LL M)  
{
```

```
    LL ANS = 1;
```

```
    WHILE (B > 0)
```

```
    {
```

```
        IF (B & 1)
```

```
        {
```

```
            ANS = (ANS * A) % M;
```

```
        }
```

```
        A = (A * A) % M;
```

```
        B >>= 1;
```

```
    }
```

```
    RETURN ANS;
```

```
}
```

```
INT MAIN()  
{
```

→ calculate $50^{64^{32}} \% M$

→ $M = 1e9 + 7$ here, which is prime no.

```
cout << BINExp(50, BINExp(64, 32, M-1), M);
```

```
RETURN 0;
```

```
}
```