```
> # this is an excercise
> restart :
  r1 := unapply(rsolve( {F(m) = 2 * F(m-1) + 4 * F(m-2), F(0) = 2, F(1) = 4}, F), m);
```

$$r1 := m \rightarrow \left( -\frac{1}{5}\sqrt{5} + 1 \right) \left(1 - \sqrt{5}\right)^{m} + \left( \frac{1}{5}\sqrt{5} + 1 \right) \left(1 + \sqrt{5}\right)^{m} \quad (1)$$

```
>
>
> # cool.  Good expression.
> r1(10)
```

$$\left( -\frac{1}{5}\sqrt{5} + 1 \right) \left(1 - \sqrt{5}\right)^{10} + \left( \frac{1}{5}\sqrt{5} + 1 \right) \left(1 + \sqrt{5}\right)^{10} \quad (2)$$

(3)

```
> round(r1(10));
```

182272 (4)

```
>
>
> round(r1(3))
```

48 (5)

```
> round(r1(2))
```

16 (6)

```
> round(r1(1))
```

4 (7)

```
> round(r1(0))
```

2 (8)

```
> # Maple13 code
> # with kind assist from Carl Love at MaplePrimes.com
> # the initial values r1(0) = 2 and r1(1) = 4 are correct.
> # Matt C Anderson
> # 5 - 15 - 2017
>
```