EXAMPLE **3**	Determining the interest rate of a regular
p. 489	payment investment

Jeremiah deposits $750 into an investment account at the end of every 3 months. Interest is compounded quarterly, the term is 3 years, and the future value is $10 059.07. What annual rate of interest does Jeremiah's investment earn?
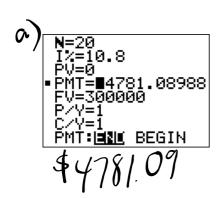
```
N=12
■I%=8.000019121
PV=0
PMT=-750
FV=10059.07
P/Y=4
C/Y=4
PMT:END BEGIN
```

$r = 8\%$ #2   #3

N
I%
PV
PMT
FV
P/Y
C/Y
PMT:

| EXAMPLE **4** | Determining the regular payment amount |
| p. 490 | of an investment |

Celia wants to have \$300 000 in 20 years so that she can retire. Celia has found a trust account that earns a fixed rate of 10.8%, compounded annually.

a) What regular payments must Celia make at the end of each year to meet her goal of \$300 000?

b) How much interest will she earn over the 20 years?

a)
```
N=20
I%=10.8
PV=0
▪PMT=■4781.08988
FV=300000
P/Y=1
C/Y=1
PMT:END BEGIN
```

$4781.09

$$P = N \times PMT$$
$$P = 4781.09 \times 20$$

b)

$$I = A - P$$

$$I = 300\,000 - 95\,621.80$$

$$I = 204\,378.20$$

EXAMPLE 5
p. 491

Determining the term of a regular payment investment

On Luis's 20th birthday, he started making regular $1000 payments into an investment account at the end of every 6 months. He wants to save for a down payment on a home. His investment earns 3.5%, compounded semi-annually. At what age will he have more than $18 000?

```
■N=15.78433191
 I%=3.5
 PV=0
 PMT=-1000
 FV=18000
 P/Y=2
 C/Y=2
 PMT:END BEGIN
```

Payments

$$t = \frac{15.78}{2}$$

$$t = 7.89 \text{ years}$$

Luis 27 yrs old

IN CLASS PRACTICE WITH THE TI-84...

```
N=12
I%=▮.000019121
PV=0
PMT=-750
FV=10059.07
P/Y=4
C/Y=4
PMT:END BEGIN
```

p. 493: #1, 2, 4, 7, 8, 10, 11, 12, 13, 15