Find the payment necessary to amortize a loan of $7400 at an interest rate of 6.2% compounded semiannually in 18 semiannual payments.

Solution To find the payment, use the formula

$$\text{PMT}=\frac{i\,\text{PV}}{1-(1+i)^{-n}}$$

In this case,

$$\text{PV}=7400$$
$$i=\frac{0.062}{2}=0.031$$
$$n=18$$

Put the values in the formula to give

$$\text{PMT}=\frac{0.031\cdot 7400}{1-(1+0.031)^{-18}}\approx 542.60$$

To find the total payments, multiply the amount of each payment by 18 to get

$$542.60(18)=9766.80$$

To find the total amount of interest paid, subtract the original loan amount from the total payments,

$$9766.80-7400=2366.80$$