

① Compound Interest:

$$A = P \left(1 + \frac{r}{n} \right)^{nt}$$

$$* \boxed{I = A - P}$$

② Simple Interest:

$$I = Prt$$

Troy borrows \$5620.00 to purchase a four wheeler. He takes out personal loan from his credit union at an annual rate of 5% with an amortization period of 5 years. Use the personal loan payment calculator table (page 132) to answer the questions.

Important

PERSONAL LOAN PAYMENT CALCULATOR: MONTHLY PAYMENT PER \$1000.00 BORROWED (INTEREST COMPOUNDED MONTHLY)					
Interest rate (%)	Term in years				
	1	2	3	4	5
3.00	84.69	42.98	29.08	22.13	17.97
3.25	84.81	43.09	29.19	22.24	18.08
5.00	85.61	43.87	29.97	23.03	18.87
5.25	85.72	43.98	30.08	23.14	18.99
5.50	85.84	44.10	30.20	23.26	19.10
5.75	85.95	44.21	30.31	23.37	19.22
6.00	86.07	44.32	30.42	23.49	19.33
6.25	86.18	44.43	30.54	23.60	19.45
6.50	86.30	44.55	30.65	23.71	19.57
6.75	86.41	44.66	30.76	23.83	19.68
7.00	86.53	44.77	30.88	23.95	19.80

1. What is Troy's monthly payment?

(i) $\frac{5620}{1000}$ Amount Borrowed (ii) 5.62×18.87
 $= 5.62$ $= \$106.05$

2. Calculate the total amount he will pay over the 5 years. (60 months)

$106.05 \times 60 = \$6363.00$

3. Calculate the finance charge on the loan.

$6363.00 - 5620.00 = \$743.00$

John is purchasing a new car which costs \$42,000.00. He has a down payment of \$5,000.00. He takes out a personal loan from his local bank at an annual rate of 5.75% and an amortization period of 4 years. (Use 15% HST)

Tax first then subtract **important** down payment

PERSONAL LOAN PAYMENT CALCULATOR: MONTHLY PAYMENT PER \$1000.00 BORROWED (INTEREST COMPOUNDED MONTHLY)					
Interest rate (%)	Term in years				
	1	2	3	<u>4</u>	5
3.00	84.69	42.98	29.08	22.13	17.97
3.25	84.81	43.09	29.19	22.24	18.08
5.00	85.61	43.87	29.97	23.03	18.87
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6.75	86.41	44.66	30.76	23.83	19.68
7.00	86.53	44.77	30.88	23.95	19.80

1. What is John's monthly payment?

$$\begin{array}{r} \text{(i)} \ 42000.00 \\ \times 1.15 \\ \hline 48300.00 \end{array}$$

$$\begin{array}{r} \text{(ii)} \ 48300.00 \\ - 5000.00 \\ \hline 43300.00 \end{array}$$

Amount Borrowed

$$\begin{array}{r} \text{(iii)} \ 43300.00 \\ \hline 1000 \\ \hline = 43.3 \end{array}$$

$$\begin{array}{r} \text{(iv)} \ 43.3 \times 23.37 \\ \hline = \$1011.921 \end{array}$$

2. Calculate the total amount he will pay over the 4 years. (48 months)

$$1011.92 \times 48 = \$48572.21$$

3. Calculate the finance charge on the loan.

$$48572.21 - 43300 = \$5272.21$$

Jack is purchasing a new trailer which costs \$36 000.00. He is trading in his old trailer which they valued at \$15 000.00. He takes out a personal loan from his local bank at an annual rate of 5.25% and an amortization period of 5 years. (Use 15% HST)

Subtract the trade in value then figure out tax

Important

PERSONAL LOAN PAYMENT CALCULATOR:
MONTHLY PAYMENT PER \$1000.00 BORROWED
(INTEREST COMPOUNDED MONTHLY)

Interest rate (%)	Term in years				
	1	2	3	4	5
3.00	84.69	42.98	29.08	22.13	17.97
3.25	84.81	43.09	29.19	22.24	18.08
5.00	85.61	43.87	29.97	23.03	18.87
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6.25	86.18	44.43	30.54	23.60	19.45
6.50	86.30	44.55	30.65	23.71	19.57
6.75	86.41	44.66	30.76	23.83	19.68
7.00	86.53	44.77	30.88	23.95	19.80

1. What is Jack's monthly payment?

(i)
$$\begin{array}{r} 36000.00 \\ -15000.00 \\ \hline 21000.00 \end{array}$$

(ii)
$$\begin{array}{r} 21000.00 \\ \times 1.15 \text{ Amount Borrowed} \\ \hline 24150.00 \end{array}$$

(iii)
$$\begin{array}{r} 24150.00 \\ 1000 \\ \hline = 24.15 \end{array}$$

(iv)
$$24.15 \times 18.99 = \$458.6085 = \boxed{\$458.61}$$

2. Calculate the total amount he will pay over the 5 years. (60 months)

$$\$458.61 \times 60 = \boxed{\$27516.60}$$

3. Calculate the finance charge on the loan.

$$\$27516.60 - 24150.00 = \boxed{\$3366.60}$$

Long Sheet

③ Trade In (Subtract trade in value the figure tax)

$$\begin{array}{r} \text{a) (i) } 26000.00 \\ - 7000.00 \\ \hline 19000.00 \end{array}$$

$$\text{(ii) } 19000.00$$

$$\begin{array}{r} \times 1.13 \\ \hline \$21470.00 \end{array}$$

(Amount Borrowed)

$$\begin{array}{r} \text{b) (i) } \underline{21470.00} \\ 1000 \\ \hline = 21.47 \end{array}$$

$$\text{(ii) } 21.47 \times 17.97 \text{ (Personal Loan Chart)}$$

$$\boxed{= \$385.82}$$

(Monthly Payment)

$$\text{c) } \$385.82 \times \begin{array}{c} 5 \times 12 \\ \downarrow \\ \underline{60} \end{array}$$

$$\boxed{= \$23149.20} \text{ (Total Loan Payment)}$$

$$\text{d) } \boxed{\$23149.20} \text{ (Out of Pocket)}$$

④ Down Payment (Calculate tax first then subtract the down payment)

$$a) \quad (i) \quad \begin{array}{r} 34000.00 \\ \times 1.13 \\ \hline 38420.00 \end{array}$$

$$(ii) \quad \begin{array}{r} 38420.00 \\ - 2500.00 \\ \hline \$ 35920.00 \end{array}$$

Amount Borrowed

$$b) \quad (i) \quad \frac{35920.00}{1000} = 35.92$$

$$(ii) \quad 35.92 \times 23.95 \text{ (Personal Loan Chart)} = \$ 860.28 \text{ (monthly payment)}$$

$$c) \quad \$ 860.28 \times \begin{array}{c} (4 \times 12) \\ \downarrow \\ 48 \end{array} = \$ 41293.44 \text{ Total Loan Payment}$$

$$d) \quad 41293.44 + 2500.00 = \$ 43793.44 \text{ out of pocket}$$

↑
down payment