

Variable costs per mile

Gasoline (\$/gall x mpg)	\$	1.40	÷	24	=	\$	0.0583	80101
Oil	\$	195	÷	15,000	=	\$	0.0130	
Maintenance	\$	465	÷	15,000	=	\$	0.0310	
Tires	\$	210	÷	15,000	=	\$	0.0140	
Variable costs per mile						\$	0.1163	

Miles driven per year		15,000	20,000	10,000
Cost of the car	\$	20,000	20,000	20,000
Present value of disposal after 4 years				
0.7084 × disposal value	\$	4,251	1,771	6,730
Loss of value over 4 years	<u>a</u>	\$ 15,749	\$ 18,229	\$ 13,270
Present value of annuity at 9%	<u>b</u>	3.2397	3.2397	3.2397
Loan payment	<u>a</u> ÷ <u>b</u>	\$ 4,861	\$ 5,627	\$ 4,096
Insurance		\$ 866	\$ 866	\$ 866
License, registration & Taxes		\$ 223	\$ 223	\$ 223
Total fixed cost per year		\$ 5,950	\$ 6,716	\$ 5,185
Fixed cost allocated per mile		\$ 0.3967	\$ 0.3358	\$ 0.5185
Variable Costs		\$ 0.1163	\$ 0.1163	\$ 0.1163
Total cost per mile		\$ 0.5130	\$ 0.4521	\$ 0.6348



Incremental costs		\$	765	\$	(765)
Incremental miles			5,000		(5,000)
Incremental cost per mile			\$ 0.1531		\$ 0.1531
Variable Costs	\$	0.1163	\$ 0.1163	\$	0.1163
Total cost per mile	\$	0.1163	\$ 0.2694	\$	0.2694

The following two tables are only for 15,000 miles

Check	Loan	Interest	Payment	Loan
Loan amortization	Beginning	9%		Ending
0				\$ 20,000
1	\$ 20,000	\$ 1,800	\$ 4,861	\$ 16,939
2	\$ 16,939	\$ 1,524	\$ 4,861	\$ 13,602
3	\$ 13,602	\$ 1,224	\$ 4,861	\$ 9,965
4	\$ 9,965	\$ 897	\$ 4,861	\$ 6,000

Approximate method

Average loan balance				
Beginning of year	=	[0	4
		\$	20,000	+
		\$	6,000	+
		\$	3,500]
		÷	2	=
		\$	14,750	
Average interest	=	\$	14,750	×
		9%	=	\$
Payment every year	=	\$	3,500	+
		\$	1,328	=
Correct payment	=	\$	4,861	