

Agriculture
Loan Investigation Activity

Group

Key

In this activity, you will be investigating time and APR to determine the best loan for each scenario.

Scenario #1: Ron wants to take out a \$39,000 truck loan through his local credit union. He has several plans to choose from.

	Time	APR	Monthly payment per \$1000 financed	
Plan 1:	24 Months	4.50%	\$43.65	
Plan 2:	36 Months	4.50%	\$29.75	
Plan 3:	48 Months	4.50%	\$22.81	
Plan 4:	60 Months	4.75%	\$18.76	
Plan 5:	72 Months	4.75%	\$16.00	for vehicles valued at \$22,500 or more
Plan 6:	78 Months	5.00%	\$15.05	for vehicles valued at \$30,000 or more

Using the information above, calculate the monthly payment. Also, find the total payment and the total interest paid. Complete the table below.

To find the monthly payment – use 39 multiplied by the monthly payment per \$1000 financed amount.

To find the total payment – multiply the monthly payment by the number of months.

To find the total interest paid – Subtract the \$45,000 from the total payment.

Plan	Monthly payment	Total payment	Total interest paid
24 month at 4.5%	\$1702.35	\$40,856.40	\$1,856.40
36 month at 4.5%	\$1160.25	\$41,769.00	\$2,769.00
48 month at 4.5%	\$889.59	\$42,700.32	\$3,700.32
60 month at 4.75%	\$731.64	\$43,898.40	\$4,898.40
72 month at 4.75%	\$624.00	\$44,928	\$5,928
78 month at 5%	\$586.95	\$45,782.10	\$6,782.10

1. If Ron has an **annual** salary of \$ 52,500 after taxes and budgets 20% for his auto loan, which monthly could he choose? Explain your reasoning.

$$52500 (.20) = 10500 \div 12 = \$875 \text{ Monthly Budget}$$

60, 72, 78 Month are possible
60 month would cost less.

2. If Ron wanted to budget only 15% of his after-tax salary for his auto loan, which monthly and biweekly plans could he choose? Explain your reasoning.

$$52500 (.15) = 7875 \div 12 = \$656.25 \text{ Monthly Budget}$$

Can choose 72 or 78 month, but
72 month would cost less.

Scenario #2

Sam is shopping for lenders for a fixed rate loan of \$190,000. He has three options from lender 1 and two options from lender #2.

Lender #1

Option 1: 15 year fixed rate at 4.375% APR

Option 2: 20 year fixed rate at 5.000 % APR

Option 3: 30 year fixed rate at 5.125% APR

Lender #2

Option 1: 15 year fixed rate at 4.83 % APR

Option 2: 30 year fixed rate at 5.04 % APR

Complete the tables below.

To calculate the monthly payment, go to

and use the mortgage calculator and enter information.

To find the total payment – multiply the monthly payment by the number of months.

To find the total interest paid – Subtract the principal (\$190,000) from the total payment.

Lender #1

Option	Monthly payment	Total payment	Total interest paid
1 15 year at 4.375% 180 pymt	\$1441.38	\$259,448.40	\$69,448.40
2 20 year at 5% 240 pymt	\$1253.92	\$300,940.80	\$110,940.80
3 30 year at 5.125% 360 pymt	\$1034.53	\$372,430.80	\$182,430.80

Lender #2

Option	Monthly payment	Total payment	Total interest paid
1 15 year at 4.83 % 180 pymt	\$1485.74	\$267,433.20	\$77,433.20
2 30 year at 5.04% 360 pymt	\$1024.61	\$368,859.60	\$178,859.60

1. Which is the best option for Sam to choose? Explain. The plan that costs the

least is Lender 1, Option 1

2. Compare the 15-year loans from the two lenders. How much money could Sam save over the life of the loan by choosing Lender 1 versus Lender 2?

\$7984.80

77433.20
- 69448.40

3. Compare the 30-year loans from the two lenders. How much money could Sam save over the life of the loan by choosing Lender 2 versus Lender 1?

\$3571.20

182430.80
- 178859.60

Scenario #3:

Smith Farms wants to borrow \$481,711 for a new combine. They have several options to choose from at their local credit union.

Option 1: 15 year fixed rate at 4.250% APR

Option 2: 20 year fixed rate at 4.875% APR

Option 3: 30 year fixed rate at 5.000% APR

Complete the table below.

To calculate the monthly payment, go to

and use the mortgage calculator and enter information.

To find the total payment – multiply the monthly payment by the number of months.

To find the total interest paid – Subtract the principal from the total payment.

Option	Monthly payment	Total payment	Total interest paid
1 15 year at 4.25%	\$ 3623.81	\$ 652,285.41	\$ 170,574.41
2 20 year at 4.875%	\$ 3145.91	\$ 755,018.40	\$ 273,307.40
3 30 year at 5%	\$ 2585.93	\$ 930,934.80	\$ 449,223.80

1. If the Smith Farms monthly income is \$23,750 and they budget 15% for equipment expenditures in their spending plan, which of the three fixed rate mortgage options should they choose? Explain your reasoning.

$$\begin{array}{r} 23750 \\ \times 0.15 \\ \hline \end{array}$$

Monthly Budget = 3562.50

20 or 30 yr is possible
Should go with Option 1-20yr
because it costs less

2. As the time frame increases so does the APR, explain what happens to the monthly payment **and** the total interest paid.

Monthly payment decreases
Total interest paid increases.