

Unit 6 Review

If you use the TVM solver make sure you write down what you put into the calc

1. Richard is putting money into savings account. He is putting 6,000 into a savings account with a 5.5% interest rate compounded monthly for 40 years. How much will he have in 40 years?

$$6,000 \left(1 + \frac{0.055}{12}\right)^{(12 \cdot 40)}$$

N: 480 I: 5.5 PV: 6,000 PMT: 0 FV: X C/Y P/Y: 12

$$\boxed{53,878.59}$$

2. Alfred wants to have 500,000 in 50 years. How much will he need to put in if he has a CD with 3.2% interest compounded monthly?

$$500,000 = PV \left(1 + \frac{0.032}{12}\right)^{(50 \cdot 12)}$$

$$500,000 = PV \cdot 4.942$$

N: 600 FV: 500,000
I: 3.2 C/Y P/Y: 12
PV: X
PMT: 0

$$\boxed{101,173.61 = PV}$$

3. What does TOTAL COST mean?
ALL THE MONEY YOU HAVE EVER SPENT ON SOMETHING. FOR EXAMPLE ALL MONTHLY PAYMENTS. THIS 'TOTAL COST' INCLUDES ALL THE INTEREST YOU HAVE EVER PAID

4. Selina and Bruce are buying a house for 175,000. They can either have a 15 year mortgage or a 30 year mortgage. The interest rate that their bank is giving them is 4.5%

- a. What would the monthly payment be on a 15 year mortgage?

N: 180 FV: 0
I: 4.5 C/Y P/Y: 12
PV: 175,000
PMT: X

$$\boxed{\$1338.74}$$

- b. What would be the monthly payment on a 30 year mortgage?

N: 360 FV: 0
I: 4.5 C/Y P/Y: 12
PV: 175,000
PMT: X

$$\boxed{886.70}$$

- c. What is the TOTAL COST of the 15 year mortgage?

$$(1338.74)(180) = \boxed{240,973.20}$$

- d. What is the TOTAL COST of the 30 year mortgage?

$$(886.70)(360) = \boxed{319,212}$$

5. Pamela has a lot of credit card debt. Below are her current balances on her credit cards. Calculate the minimum payment for each if she wants to have them paid off in 2 years

~Chase \$10,562 at 29.99% APR $\boxed{590.50}$

~Visa \$3,401 at 23.99% APR $\boxed{179.80}$

~MasterCard \$12,209 at 11.5% APR $\boxed{571.87}$

~BP gas card \$1,997 at 20.99% APR $\boxed{102.61}$

~Discover \$5,355 at 18.99% APR $\boxed{269.91}$

N: 24 THIS CHANGES FOR EACH CARD

I:	29.99	23.99	11.5	20.99	18.99
PV:	10,562	3,401	12,209	1,997	5,355
PMT:	X				
FV:	0				
C/Y					
P/Y					

The previous balance on Harvey's credit card is \$4,321. He spent \$534 this month and paid off \$243.

a. What is his end of month balance?

$$4321 + 534 - 243 = \boxed{\$4612}$$

b. His APR is 29.99%. What is his monthly periodic rate?

$$29.99\% / 12 = \boxed{2.499\%}$$

c. What is his finance charge for this month?

$$4612(.02499) = \boxed{\$115.25}$$

d. What is his new balance? (end of the month balance + the finance charge)

$$4612 + 115.25 = \boxed{\$4727.25}$$

e. His minimum payment is 3.7% of his end of month balance (without finance charge). What is his minimum payment?

$$4612(.037) = \boxed{\$170.64}$$

f. If he only pays the minimum payment and does not spend anymore how many months (or years) will it take him to pay off his credit card?

N: X
I: 29.99
PV: 4727.25
PMT: 170.64
FV: 0
CY: 12

$$\boxed{47.75 \text{ MONTHS OR } 3.98 \text{ YEARS}}$$

g. How much would he need to pay per month to pay off his credit card in 2 years?

N: 24
I: 29.99
PV: 4727.25
PMT: X
FV: 0
CY: 12

$$\boxed{\$264.29}$$

h. Harvey's annual salary is 21,000. His taxes are 22.65% and his total monthly expenses are \$950. If he chooses to pay the amount from part g, how much money will he have left over each month for food and personal things? What options would you give Harvey to be able to have more money at the end of the month?

$$21,000 / 12 = 1,750$$

$$1,750(.2265) = 396.38$$

$$1,750 - 396.38 = 1,353.62$$

HE SHOULD GET A ROOMMATE TO SPLIT THE RENT + UTILITIES OR SELL HIS CAR AND TAKE PUBLIC TRANSPORTATION

$$1,353.62 - 950 = 403.62$$

$$403.62 - 264.29 = \boxed{\$139.33}$$

MONTHLY EXPENSES CREDIT CARD

Viktor is buying a new car. He is going to buy a new Cadillac Escalade for \$61,598. He has two options. If he buys the car he must pay a 10% down payment over 3 years at a 4.9% interest rate. What would be his monthly payment if he chooses to buy the car?

N: 36
I: 4.9
PV: 55,438.2
PMT: X
FV: 0
CY: 12

$$\boxed{\$1659.04}$$

$$61,598 - 6,159.80 = \boxed{\$55,438.2}$$

What is the total cost of the car if he assumes he can sell back the car for \$28,874?

$$(1659.04)(36) + 6,159.80 = 65,885.24$$

$$65,885.24 - 28,874 = \boxed{37,011.24}$$

$$\boxed{37,011.24}$$

The other option is to lease the car. If he leases the car the monthly payment is \$709 for 3 years with \$1,999 due at signing. What is the total cost of the car if he leases it?

$$(709)(36) + 1,999 = \boxed{27,523}$$

Which option (Buy or Lease) would you pick and why?