8.12 (D)

Calculate and compare simple interest and compound interest earnings

INTERVENE

<1 min

Calculator Cheat Sheet (Zoom In)

To type the variable "x" Ex: 3x + 2	1. Type the 3 2. Press X, T, θ button 3. Type + and then 2
To display a table for y = 3x + 2	1. Go to y = (at the top left) 2. Enter 3x + 2 into y_1 = 3. Press 2nd Graph
To display a graph for y = 3x + 2	1. Go to y = (at the top left) 2. Enter your equation into y_1 3. Press graph
Adjust your window	1. Press window 2. change xmin, xmax, ymin, ymax 3. Press graph again
To return to home screen if you are in the graphing or table mode	2nd Mode
To delete something you typed in error	Use right or left arrow to highlight what you want to delete and then press delete
To insert something you forgot	Highlight where the item should go and press 2nd Delete (insert)
Entering a set of data	1. Press Stat then press Enter 2. Put x-values in L_1 3. Put y-values in L_2
Ordering a set of data in a List	1. 2nd Stat 2. Move cursor to OPS 3. Press 1 for ascending or Press 2 for descending 4. 2nd (Choose the list you want to sort by pressing 1-6) 5. Press 2nd and the list you sorted 6. Enter
Creating a scatter plot for data	1. Follow steps above to enter the data 2. Go to y = and up arrow to highlight plot 1 3. Press enter and down arrow 4. Zoom 9 and your points should appear
Write an equation for a set of data that you know is linear. (Linear Regression)	1. Follow steps above to enter data 2. Press Stat, Right Arrow to calculate, press 4, Enter

Calculator Cheat Sheet

Operation	Button
Reset Memory	2nd +, 7, 1, 2
Turn Off	2nd On
Darken Screen	2nd Up arrow
Lighten Screen	2nd Down Arrow
Open Parentheses	Above the 8
Closed Parentheses	Above the 9
To clear the home screen	Clear
To enter a negative number like -5	Press (-) (at bottom right next to decimal point) and then the number
Square a number Try squaring 5 and -5 Be sure to put -5 in ( )	1. Press 5 2. Press x^2 1. Press (-5) 2. Press x^2
Take the square root of a number $\sqrt{484}$	1. Type 2nd x^2, a square root symbol will pop up on your screen, 2. Type in the number you want to take the square root of and close the ( ) 3. Press Enter
Raise a number to a power: 4^3	1. Type 4 2. Type ^ (right below clear) 3. Type the power
To enter a fraction like $\frac{5}{9}$	Path 1 1. Open Parentheses 2. 5 3. ÷ 4. 9 5. Close Parentheses 6. Enter Path 2 (New Operating System) 1. Alpha y= 2. Choose between 1,2,or 3 3. Then place the number in the correct place
To turn a decimal into a fraction	Math, Enter, Enter
To use π	Second ^
To recall the last thing you typed so you can edit it	2nd Enter

Fluency Practice

- Convert 3% to a decimal:
- Convert 48% to a decimal:

Use your calculator to solve:

- $(7 + 9.2)^3 =$
- $(9 \times 0.5)^2 =$
- $(8 + .8)^3 =$

2 min

Problem Solving Strategies

- **1. Understand the Problem**
  - Read the problem carefully (at least 2 to 3 times)
  - Highlight important information (what do I know)
  - Identify Math Clue words (words that tell you what math operations you need to use)
  - Underline what you need to find
- **2.Plan of Action (how you will solve this problem in steps)**
  - First I will
  - Then I will
  - Next I will
  - Finally, I will
- **3. Show your work in steps (solve using your steps)**
- **4. Check your answer (does my answer make sense? why)**

<3 min

Interest Lesson

- **Simple interest** is calculated on the principal, or original, amount of a loan.
- **Compound interest** is calculated on the principal amount and also on the accumulated **interest** of previous periods, and can thus be regarded as "**interest** on **interest**."
- Look at the formulas and determine which to use.

1 min

Look at formulas!!

Simple interest	$I = Prt$
Compound interest	$A = P(1 + r)^t$

- P = Principal amount **(total amount borrowed)**
- r = Interest rate **(Change % to Decimal)**
- t = Number of periods **(Years)**

I do

Mr. Wilkins deposited $2,500 in a new account at his bank.

- The bank pays 6.5% interest compounded annually on this account.
- Mr. Wilkins makes no additional deposits or withdrawals.

Which amount is closest to the balance of the account at the end of 2 years?

F $2,835.56

G $2,513.00

H $2,662.50

J $2,825.00

<5 min

We do - Question 1

Mr. Flores opened an account with a deposit of $5,000.

- The account earned annual simple interest.
- He did not make any additional deposits or withdrawals.
- At the end of 4 years, the balance of the account was $6,500.

What is the annual interest rate on this account?

A 5.8%

B 7.5%

C 3.3%

D 1.9%

<5 min

We Do – Question 2

Olivia will deposit $1,530 in an account that earns 6% simple interest every year. Her sister Melinda will deposit $1,500 in an account that earns 8% interest compounded annually. The deposits will be made on the same day, and no additional money will be deposited or withdrawn from the accounts. Which statement about the balances of Olivia's account and Melinda's account at the end of 3 years is true?

A Olivia's account will have about $5.40 more than Melinda's account.

B Olivia's account will have about $84.17 more than Melinda's account.

C Melinda's account will have about $5.40 more than Olivia's account.

D Melinda's account will have about $84.17 more than Olivia's account.

<5 min

We do - Question 3

Tamara invested $15,000 in an account that pays 4% annual simple interest. Tamara will not make any additional deposits or withdrawals. How much interest will Tamara earn on her investment at the end of 3 years?

F $1,800

G $600

H $450

J $1,873

<5 min

Q4

Nicolas has $650 to deposit into two different savings accounts.

- Nicolas will deposit $400 into Account I, which earns 3.5% annual simple interest.
- He will deposit $250 into Account II, which earns $3\frac{1}{4}$% interest compounded annually.

Nicolas will not make any additional deposits or withdrawals. Which amount is closest to the total balance of these two accounts at the end of 2 years?

A $672.13

B $695.00

C $694.25

D $694.51

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1 min

Look at formulas!!

Simple interest	$I = Prt$
Compound interest	$A = P(1 + r)^t$

- P = Principal amount (total amount borrowed)
- r = Interest rate (Change % to Decimal)
- t = Number of periods (Years)

You Do

- Go back to Intervene to take your quiz!

Answer Key

- I Do – F
- We Do 1 – B
- We Do 2 – D
- We Do 3 – F
- We Do 4 - D