Retirement Plan Matchup

Use growth, matches, and fees to compare savings choices.

HIGH SCHOOL · MA.912.FL.4.3

MA.912.FL.4.3 "Compare the advantages and disadvantages of various retirement savings plans using spreadsheets and other technology."

NAME ____________________ DATE ____________

COMPARE THE ENDING BALANCE

A spreadsheet can track each plan's starting balance, growth, deposits, employer match, and fees. For one year, multiply the starting balance by (1 + rate), then add deposits and matches, and subtract any fee. A higher ending balance can be an advantage, but also compare features such as employer matching and fees.

WORKED EXAMPLE

A plan starts with $500, grows by 6%, and then receives a $150 deposit. What is the ending balance after one year?

1. Find the growth: $500 x 0.06 = $30.
2. Add growth to the starting balance: $500 + $30 = $530.
3. Add the deposit: $530 + $150 = $680.

Answer: $680

PRACTICE 6 problems

1 You contribute $240 to a workplace retirement plan. Your employer matches 25% of your contribution. How much is the employer match?

ANSWER ____________________

2 A retirement account starts with $800, grows by 5%, and then receives a $100 deposit. What is the ending balance?

ANSWER ____________________

3 A plan has a $900 balance and charges a $27 annual fee. What percent of the balance is the fee?

ANSWER ____________________

4 You deposit $360 in a plan. Your employer adds a 50% match. What total amount is added to the account?

ANSWER ____________________

5 Plan D earns 9% before fees and charges a 2% annual fee based on the balance. What is its approximate net annual return rate?

ANSWER ____________________

6 A spreadsheet shows that Plan E has a balance of $1,200 and Plan F has a balance of $1,150. Plan E charges a $24 annual fee, while Plan F has no annual fee. Which plan has the higher balance now, and what disadvantage does it have?

ANSWER ____________________

APPLY IT
Show your work

1 Jordan has a part-time job and puts $30 from each monthly paycheck into a workplace retirement plan. The employer matches 50% of each deposit. Jordan could instead save $35 per month in an account with no employer match. After 12 months, how much goes into each account? Which choice has the larger total deposit?

WORK SPACE

ANSWER ______________________

2 After a summer internship, Maya has $2,000 to leave in one of two retirement plans for one year. Plan H earns 4% and then charges a $20 fee. Plan J earns 3% and charges no fee. Find each ending balance. Which plan has the financial advantage after one year?

WORK SPACE

ANSWER ______________________

CHALLENGE
One step up

CHALLENGE

Use a two-year spreadsheet pattern to compare two plans. Both plans start with $1,000. At the end of each year, Plan A grows by 10%, then receives your $200 deposit and a $100 employer match. At the end of each year, Plan B grows by 8%, then receives your $300 deposit and no employer match. What is each plan's balance after two years? Which plan is higher, and by how much?

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ANSWER KEY

Retirement Plan Matchup

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	You contribute $240 to a workplace retirement plan. Your employer matches 25% of your contribution. How much is the employer match?	**$60**
2	A retirement account starts with $800, grows by 5%, and then receives a $100 deposit. What is the ending balance?	**$940**
3	A plan has a $900 balance and charges a $27 annual fee. What percent of the balance is the fee?	**3%**
4	You deposit $360 in a plan. Your employer adds a 50% match. What total amount is added to the account?	**$540**
5	Plan D earns 9% before fees and charges a 2% annual fee based on the balance. What is its approximate net annual return rate?	**7%**
6	A spreadsheet shows that Plan E has a balance of $1,200 and Plan F has a balance of $1,150. Plan E charges a $24 annual fee, while Plan F has no annual fee. Which plan has the higher balance now, and what disadvantage does it have?	**Plan E has the higher balance by $50, but it charges a $24 annual fee.**

PART 2 · APPLY IT

1. **Workplace plan: $540. Account with no match: $420. The workplace plan has the larger total deposit by $120.** The employer adds $15 each month, so the workplace plan receives $45 per month. Multiply each monthly total by 12 and compare the results.
2. **Plan H: $2,060. Plan J: $2,060. Neither plan has a financial advantage after one year because the ending balances are equal.** Plan H grows by $80, then the $20 fee is subtracted. Plan J grows by $60 with no fee, so both plans end at the same amount.

CHALLENGE

Plan A: $1,840. Plan B: $1,790.40. Plan A is higher by $49.60.

Accept dollar amounts written with or without commas and trailing zeros. For the challenge, students may show a two-row table or equivalent year-by-year calculations, as long as growth is applied before that year's deposits and match.