6.2 Types of Funds
Student Activity Packet
UNIT: INVESTING STRATEGIES & EXPONENTIAL FUNCTIONS

Name:

IN THIS LESSON, YOU WILL:

- Write and solve exponential functions using function notation
- Use exponential functions to analyze the long-term impact of investing fees
- Identify different types of funds, including ETFs and TDFs
- Consider the advantages and disadvantages of investing with robo-advisors
- Analyze how an investor shifts their portfolio allocation over time

INTRO

QUESTION OF THE DAY: Over a recent 20 year period, what percent of pros investing in large companies "beat the market?"

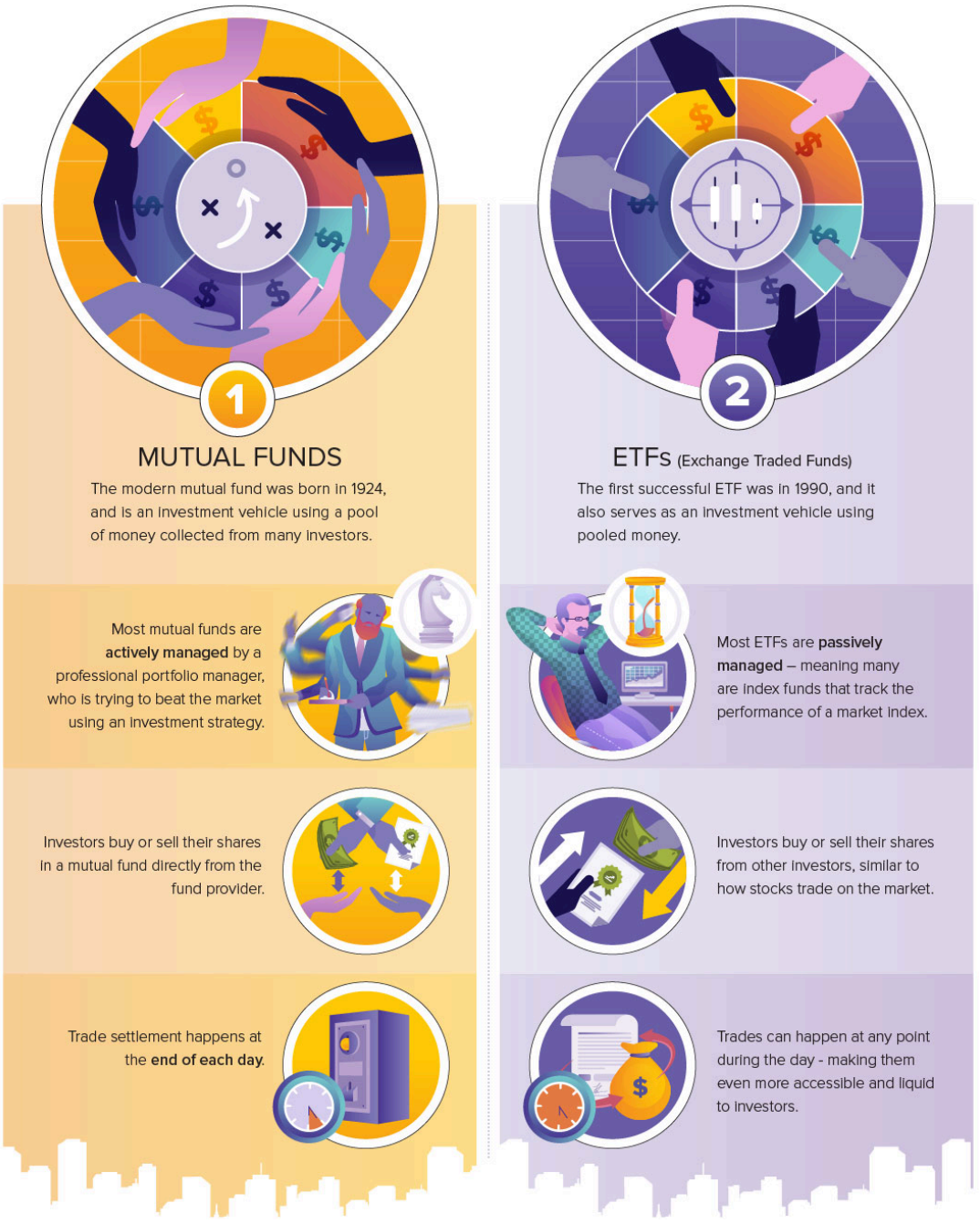
Write your answer to the question below. Then, compare your answer to the answer on the second slide.

1. **Over a recent 20 year period, what percent of pros investing in large companies "beat the market?"**

LEARN IT

INFOGRAPHIC: The Difference Between Mutual Funds and ETFs

You've learned about mutual funds and index funds, now let's learn about another investment vehicle: exchange-traded funds (ETFs). Like a mutual fund, an ETF pools together different investments, but there are a few key differences. Examine the infographic and answer the questions.



1. **Identify whether each of the following statements describes a mutual fund (M) or ETF (E). Circle or highlight your answers. Be careful - some statements may describe both or neither!**

Statement	Mutual Fund or ETF?	
a. This fund usually aims to track a specific index and provide its average return.	M	E
b. Investors buy or sell their shares directly from other investors, like an individual stock.	M	E
c. This fund is traded at the end of the day.	M	E
d. This fund uses a pool of money from many investors.	M	E
e. Of the two funds, this type has more total assets under management	M	E

2. **In 2002, there was $102 billion under management by ETFs in the US. ETF assets have grown approximately 25% annually since then[1].**
    a. Write a function f(x) to model the predicted value of ETF assets, in billions of dollars, after x years.

    b. What is f(14)? What does that represent in this context?

3. **Make a prediction: do you think the assets managed by ETFs will continue to grow at such a fast rate? Why or why not?**

VIDEO: Choosing the Right Target Date Fund

Another type of fund you can invest in is a target date fund (TDF), which is commonly used to invest for retirement. Watch the video and answer the questions.

Note: This video mentions the 9 TDFs within a specific retirement plan; however, there are many different TDFs offered by different providers that you can choose from.

1. **What two factors influence which target date fund you should choose?**

2. **Why are target date funds considered a good introductory investment option for people who don't want to choose individual investments?**

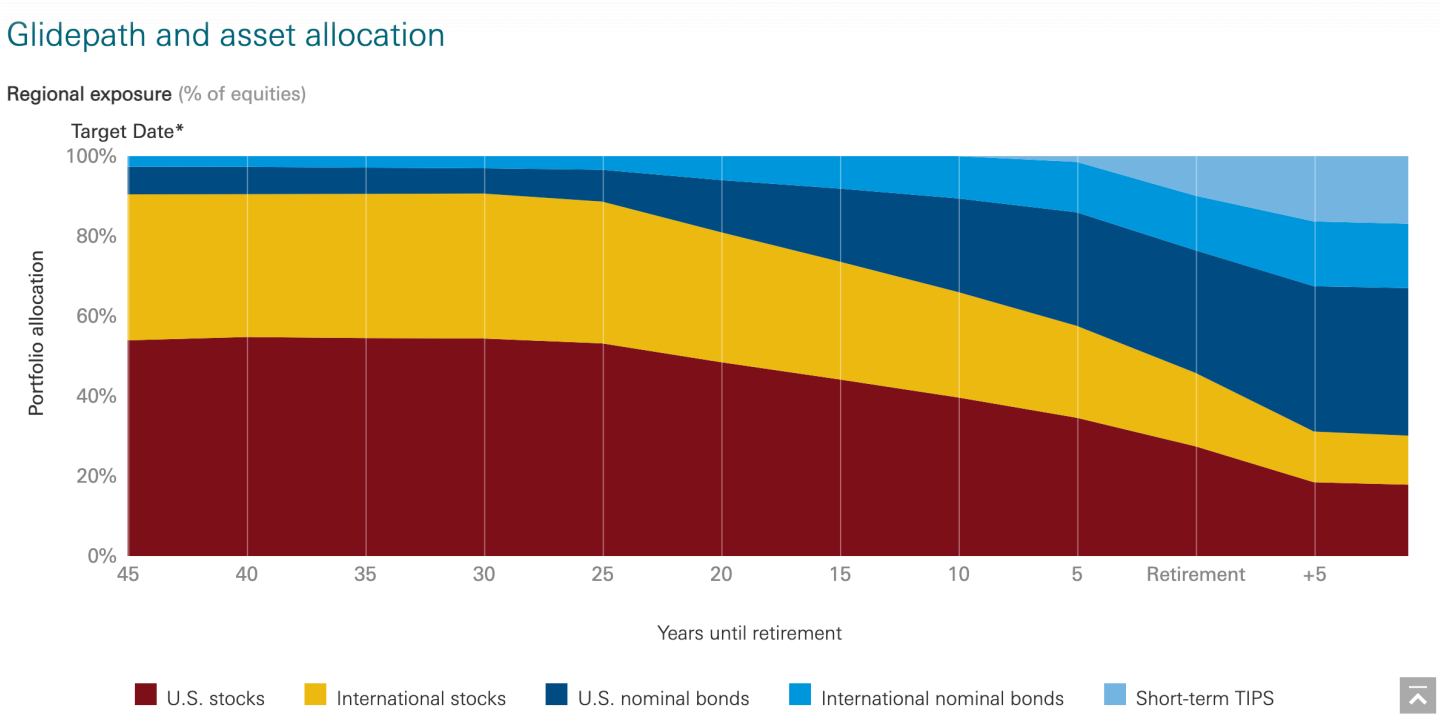
3. **How would a 2030 fund likely differ from a 2060 fund?**

4. **Sarah is 31 and plans on retiring in 2053. She is willing to accept slightly more risk in her investments. Which of the following TDFs should she pick: 2045, 2050, 2055, 2060? Why?**

[1] https://www.statista.com/statistics/295632/etf-us-net-assets/

GRAPH: TDF Glide Path

One way to analyze a TDF is to look at its glide path, which tells you how the fund allocates your portfolio over time. Study the graph for an example 2065 TDF and answer the questions.



Source

Note: "Short-term TIPS" refers to a type of Treasury bond that is indexed to inflation. It is intended to provide steady returns that are lower, but less volatile than many other securities.

1. **Assuming a retirement age of 65, what age range might consider investing in this fund?**

2. **Approximately what percentage of the fund is invested in stocks, compared to bonds, when it is 20 years before retirement?**

3. **How do the amounts invested in stocks, bonds, and other securities change as you get closer to retirement? Why?**

ARTICLE: Robo-Advisor

As you've seen, TDFs are a popular option for beginner investors who don't want to pick individual investments. Robo-advisors serve a similar purpose by automating the investing process for you. Robo-advisors are not a type of fund; they act more like a financial advisor and generally invest in a portfolio of low-cost index funds and ETFs.

1. **Would you feel comfortable having an algorithm make your investing decisions? Why or why not?**

2. **The article describes a robo-advisor's advice as "unbiased and objective". Do you think that's a fair description? Why or why not?**

3. **Robo-advisors often have lower account minimums than traditional advisors, so you can start investing with less money. Make an inference: What do you think could be the impact of making investing more accessible?**

PRACTICE IT

ACTIVITY: MOVE: Follow the Funds

It's time to use your knowledge of funds and exponential functions to solve a series of scavenger hunt clues. Follow your teacher's instructions to complete this activity.

MATH CONNECTION - WRITING EXPONENTIAL FUNCTIONS

DESMOS: Comparing Funds Using Compound Annual Growth Rate

One way we can measure a fund's performance, and compare it to other funds, is by calculating the compound annual growth rate (CAGR) for that investment over a specific period of time. Follow your teacher's instructions to complete this Desmos activity.

EXIT TICKET

Follow your teacher's instructions to complete the Exit Ticket.

Teachers, you can find exit ticket questions on the Lesson Guide.