

1	THE STOCK MARKET
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1	THE STOCK MARKET
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1-1	BUSINESS ORGANIZATION
OBJECTIVES	<p>Learn the basic vocabulary of business organizations.</p> <p>Compute financial responsibility of business ownership based on ratios and percents.</p>
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Key Terms	
<ul style="list-style-type: none"> ● capital ● sole proprietorship ● profit ● personally liable ● partnership 	<ul style="list-style-type: none"> ● corporation ● shares of stock ● shareholders ● limited liability ● public corporation
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How do businesses start?

- What are common everyday products that you think sell millions each year?
- In which type of business do you think an owner's personal possessions may potentially be taken in the event of a lawsuit or a financial crisis?
- If you owned shares of stock in a public corporation, what would that mean to you in terms of profit and personal liability?

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Example 1

Michelle invests \$15,000 in a partnership that has four other partners. The total investment of all partners is \$240,000. What percent of the business does Michelle own?

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CHECK YOUR UNDERSTANDING

Kyle invests \$20,000 in a partnership that has five other partners. The total investment of the partners is \$160,000. What percent of the business is owned by the five other partners?

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Example 2

The total number of shares of stock in the Bulls Corporation is 650,000. Mike owns 12% of the shares. How many shares of Bulls Corporation stock does he own?

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CHECK YOUR UNDERSTANDING

Jillian owns 60% of the stock in a private catering corporation. There are 1,200 shares in the entire corporation. How many shares does Jillian own?

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Three partners are investing a total of \$900,000 to open a garden and landscaping store. Their investments are in the ratio 2:3:5. How much does the partner that invested the least contribute?

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Two partners are starting a wedding planning business. The total investment is \$45,000. Their investments are in the ratio 4:5. How much does each investor contribute?

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Two partners each invest 35% in a startup business. They need to find another investor for the rest of the money. What percent of the business will that person own? Write a ratio to represent the investments in the business.

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**1-2
STOCK MARKET DATA**

OBJECTIVES

Use stock data to follow the daily progress of a corporate stock.
Write spreadsheet formulas.

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Key Terms

- stock market
- trades
- NYSE
- NASDAQ
- last
- close
- high
- low
- volume
- Sales in 100s
- 52-week high
- 52-week low
- net change
- after-hours trading
- spreadsheet
- cell

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What stock market data is available on a daily basis?

- Where have you heard the word *trend* used before?
- How might trends be important when following the stock market?
- What makes an Internet site credible?
- Name credible Internet sources for financial information.
- What is a stock trade?
- Why is net change an important stock statistic?

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Example 1

What was the difference between the high and the low prices on May 5?

XYZ Corporation		XYZ Corporation	
May 5		May 12	
Last	52.20	Last	49.98
Trade Time	4:00PM ET	Trade Time	4:00PM ET
Chg	2.61	Chg	-1.55
Open	50.10	Open	49.90
52-week High	60.45	52-week High	60.45
52-week Low	43.60	52-week Low	43.60
Sales in 100s	28000	Sales in 100s	32000
High	52.60	High	51.40
Low	49.00	Low	50.60

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CHECK YOUR UNDERSTANDING

What was the difference between the high and low prices on May 12?

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On May 12, what was the actual volume of XYZ shares posted? Write the volume in thousands.

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On May 5, what was the actual volume of XYZ shares posted? Write the volume in thousands.

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At what price did XYZ Corporation close on May 4?

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CHECK YOUR UNDERSTANDING

At what price did XYZ Corporation close on May 11?

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Use the May 4 closing price from Example 3 and the May 5 opening price to find the difference in prices as a percent increase. Round to the nearest hundredth percent.

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Use the May 11 closing price from the previous Check Your Understanding and the May 12 opening price to represent the difference as a percent decrease. Round to the nearest hundred percent.

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On May 6, the XYZ Corporation announced a decrease in earnings. This news caused the price of their stock to drop. It closed at \$44.37. Express the net change from May 5 to May 6 as a percent.

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CHECK YOUR UNDERSTANDING

On May 13, the XYZ Corporation announced another decrease in earnings. The price of their stock dropped to close at \$45.72. Express the net change from May 12 to May 13 as a percent, to the nearest tenth.

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Spreadsheets

cell D4

	A	B	C	D	E	F
1	XYZ CORP					
2						
3	Date	High	Low	Close	Change	% Change
4	4-May	50.23	49.34	49.59		
5	5-May	52.60	49.00	52.20		
6	6-May	52.20	40.78	44.37		

	A	B	C	D	E	F
1	XYZ CORP					
2						
3	Date	High	Low	Close	Change	% Change
4	4-May	50.23	49.34	49.59		
5	5-May	52.60	49.00	52.20	2.61	
6	6-May	52.20	40.78	44.37		

=D5-D4

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EXAMPLE 6

Write a formula for cell F6 to calculate the percent net change for May 6.

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CHECK YOUR UNDERSTANDING

Write formulas for cells E6 and F5 in the spreadsheet above.

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**1-3
STOCK MARKET DATA
CHARTS**

OBJECTIVES

- Interpret a stock bar chart.
- Create a stock bar chart.
- Interpret a stock candlestick chart.
- Create a stock candlestick chart.

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Key Terms

- stock chart
- stock bar chart
- candlestick chart

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How can stock data be displayed?

- What types of data displays have you studied?
- Are any of these data displays a good fit for the stock market data?
- Why might an investor be interested in historical information about the trading prices and volumes of a particular stock?

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EXAMPLE 1

Which day had the greatest high price? Which day had the least low price?

Day	High Price	Low Price	Volume (Millions)
'78	~\$4.45	~\$4.10	~100
'79	~\$4.45	~\$4.10	~100
'80	~\$4.45	~\$4.10	~100
May 1	~\$4.45	~\$4.10	~100
2	~\$4.45	~\$4.10	~100

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CHECK YOUR UNDERSTANDING

Between which two days did afterhours trading appear to have the biggest impact on the difference between the closing price and the following day's opening price?

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Approximately how many shares of Ford Motor Company were traded over the five-day period?

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Use the stock bar chart to write a brief financial story of the trading action that occurred for Ford Motor Company on April 28 and April 29. Begin your story with "On April 28, one share of Ford Motor Company opened at \$8.15. During the day . . ."

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Use the information below to construct a one-day stock bar chart.

Open: \$40.10	Close: \$39.79	
High: \$40.65	Low: \$39.39	Volume: 44,500,000

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CHECK YOUR UNDERSTANDING

Suppose that trading was suspended for one entire day for a corporation. What might the stock bar chart look like?

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Candlestick charts

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EXAMPLE 4

Explain the difference between the market action on September 8 compared to September 9 shown in the candlestick chart for Sept. 7–11.

Candlestick Chart, Sept. 7–11

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CHECK YOUR UNDERSTANDING

Interpret a green candlestick that is shown as only a rectangle with no lines at the top or bottom.

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EXAMPLE 5

What was the approximate difference between the highest price and the lowest price for the week shown in the candlestick chart for Sept. 7–11?

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The lengths of the candlesticks for September 8 and 11 are approximately the same. What does this mean about the trading prices on both of those days?

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1-4 SIMPLE MOVING AVERAGES

OBJECTIVES

Understand how data is smoothed.

Calculate simple moving averages using the arithmetic average formula.

Calculate simple moving averages using the subtraction and addition method.

Graph simple moving averages using a spreadsheet.

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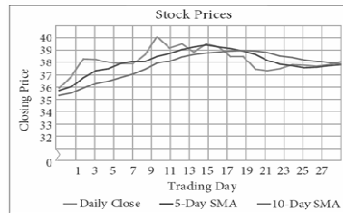
- smoothing techniques
- simple moving average (SMA)
- arithmetic average (mean)
- lagging indicators
- fast moving average
- slow moving average
- crossover

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How can stock data be smoothed?

- What factors might contribute to the fluctuation of stock market prices?



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Example 1

The closing prices for 10 consecutive trading days for a particular stock are shown. Calculate the 5-day SMA and plot both the closing prices and the averages on a graph.

Day	Closing Price
1	35.02
2	35.01
3	34.65
4	36.09
5	35.32
6	35.50
7	35.03
8	35.79
9	37.07
10	36.05

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CHECK YOUR UNDERSTANDING

Closing prices for 10 consecutive trading days were \$55, \$60, \$62, \$48, \$40, \$42, \$45, \$46, \$43, and \$49. Calculate the 5-day SMA. Plot both the closing prices and the averages on a graph.

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Example 2

Use the subtraction and addition method to determine the 4-day SMA for the following closing prices.

\$121, \$122, \$120, \$119, \$124, \$128, \$126

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CHECK YOUR UNDERSTANDING

Use the subtraction and addition method to determine the 3-day SMA for the closing prices \$28, \$31, \$37, \$38, and \$35.

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EXTEND YOUR UNDERSTANDING

In Example 2, what would the eighth trading day's closing price have to be so that the next moving average remains the same at \$124.25?

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Graph simple moving averages using a spreadsheet

	A	B	C
1	Day	Closing Price	10-day Moving Average
2	1	35.02	
3	2	35.01	
4	3	34.65	
5	4	36.09	
6	5	35.32	
7	6	35.5	
8	7	35.03	
9	8	35.79	
10	9	37.07	
11	10	36.05	35.55
12	11	26.85	31.74
13	12	36.03	35.04
14	13	38	35.37
15	14	37.76	35.54
16	15	37.69	35.77
17	16	37.66	35.99
18	17	38.3	37.32
19	18	39.43	37.69
20	19	38.72	37.89
21	20	38.01	38.15
22	21	38.48	38.21
23	22	39.04	38.41
24	23	38.3	38.49
25	24	38.19	38.53
26	25	38.2	38.59
27	26	37.3	38.55
28	27	37.2	38.44
29	28	37.38	38.42
30	29	37.61	38.11
31	30	37.57	37.97

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EXAMPLE 3

Use a spreadsheet to calculate the 5-day SMA of the closing prices for 10 consecutive trading days.

	A	B	C
1	Day	Close	Moving Average
2	28-Apr	29.39	
3	29-Apr	29.27	
4	30-Apr	29.21	
5	1-May	29.70	
6	2-May	29.08	29.33
7	5-May	29.24	29.30
8	6-May	29.40	29.33
9	7-May	28.52	29.19
10	8-May	28.64	28.98
11	9-May	28.99	28.96

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CHECK YOUR UNDERSTANDING

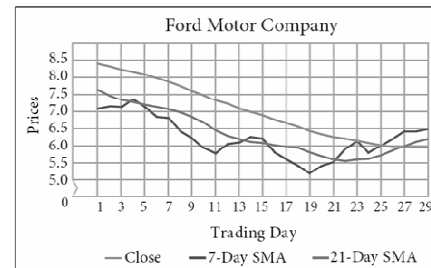
Add column D to the spreadsheet to calculate the 3-day SMA. In what cell do you start? What formula do you use?

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EXAMPLE 4

The graph shows the closing prices for 30 consecutive trading days. It also charts the 7-day and 21-day simple moving averages. What signal might the graphs give an investor?



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CHECK YOUR UNDERSTANDING

Suppose that on the 35th trading day, the 21-day SMA graph rises above the 7-day graph. What might that indicate?

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**1-5
STOCK MARKET
TICKER**

OBJECTIVES

Understand stock market ticker information.

Determine the total value of a trade from ticker information.

Determine trade volumes from ticker information.

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Key Terms

- Dow Jones Industrial Average (DIJA)
- ticker
- stock symbol
- ticker symbol
- trading volume
- trading price
- directional arrow
- total value of a trade
- uptick
- downtick
- money flow
- positive money flow
- negative money flow
- daily money flow
- net money flow

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How is stock market data transmitted to the investor?

- Why might an investor be interested in a ticker?

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Example 1

Marcy is following the stock market ticker scrolling across the bottom of her TV screen on cable business station. She had purchased some shares of Visa, Inc. last week and is interested in seeing if there are any current trades. She knows that Visa, Inc. has the ticker symbol V. She saw the following information: V 12K@87.37 ▲ 0.12. What can Marcy learn from this line of symbols?

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CHECK YOUR UNDERSTANDING

Kevin knows that General Electric has the ticker symbol GE. What can Kevin learn from the following line of symbols: GE 12K@73.72 ▼ 0.55?

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EXTEND YOUR UNDERSTANDING

Had the trading price of this transaction been at \$87.35, what number would have appeared after the directional arrow? Explain your answer.

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Tom needed money for graduate school tuition. He called his broker and asked her to sell all 3,000 of his Coca-Cola (KO) shares on Wednesday as soon as the trading price hit \$57 per share. Tom knew that Coca-Cola closed at \$57.25 on Tuesday. How will his trade appear on the ticker?

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What would be the previous day's close for a share of Coca-Cola if the ticker had read KO 3K@57 ▲ 0.25?

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Toni purchased 15,000 shares of stock of Target Corporation at \$54.88 per share. Her trade appeared on the stock ticker as TGT 15K@54.88 ▼ 0.17. What was the total value of her trade?

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CHECK YOUR UNDERSTANDING

Suppose Toni made her purchase at the previous day's closing price. What would have been the difference between the values of the trades?

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Grandpa Rich left his three grandchildren: Nicole, Jeff, and Kristen, 8,750 shares of Apple Inc (AAPL) in his will. The grandchildren sold all of the shares at a price of \$190.30 on Friday. The closing price of Apple on Thursday was \$187.83. How did this trade appear on the stock ticker?

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Express 0.15M shares traded using the K symbol.

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Laura is interested in trades of Microsoft (MSFT). She has been following the upticks and downticks for the past two days. She knows that MSFT closed on Tuesday at \$20.68, with a high at \$21.25 and a low at \$20.50. There were 11,902,000 shares traded on that day. She found that Monday's closing price was \$21.23. The high was \$21.30 and the low was \$19.95. The volume for Monday was 16,537,000 shares. Was the net money flow from Monday to Tuesday positive or negative?

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CHECK YOUR UNDERSTANDING

Let H represent a day's High, L represent a day's Low, C represent a day's close, and V represent the day's volume. Write a formula that can be used to determine the day's money flow.

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1-6
**STOCK
TRANSACTIONS**

OBJECTIVES

Learn the basic vocabulary of buying and selling shares of stock.

Compute gains and losses from stock trades.

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- portfolio
- round lot
- odd lot
- trade
- gross capital gain
- gross capital loss

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- What does the term "portfolio" mean
 - For an artist?
 - For a student preparing for college?
 - For the financial world?

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Example 1

Several years ago, Marlene purchased stock for \$7,241. Last week she sold the stock for \$9,219. What was her gross capital gain?

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Brett used money he received as a gift for high school graduation to purchase \$4,000 worth of shares of stock. After he graduated from college, he needed money to buy a car, so he sold the stock for \$2,433. What was his capital gain or loss?

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Five years ago, Jessica bought 300 shares of a cosmetics company's stock for \$34.87 per share. Yesterday she sold all of the shares for \$41 per share. What was her capital gain?

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Kelvin bought 125 shares of stock for \$68.24 per share. He sold them nine months later for \$85.89 per share. What was his capital gain?

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EXTEND YOUR UNDERSTANDING

Three years ago, Maxine bought 450 shares of stock for x dollars per share. She sold them last week for y dollars per share. Express her capital gain algebraically in terms of x and y .

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Randy paid \$3,450 for shares of a corporation that manufactured cell phones. He sold it for \$6,100. Express his capital gain as a percent of the original purchase price. Round to the nearest tenth of a percent.

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Allison bought shares in Citigroup Corporation in early 2007 for \$55 per share. She sold them later that year for \$35 per share. Express her loss as a percent of the purchase price. Round to the nearest percent.

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Andy paid w dollars for shares of a corporation that manufactured cell phones. He sold it for y dollars. Express his capital gain as a percent of the original purchase price. Round to the nearest tenth of a percent.

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CHECK YOUR UNDERSTANDING

Linda bought \$800 of stock in a garden equipment corporation. The selling price is x dollars. Express the percent increase of Linda's potential capital gain algebraically.

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1-7

STOCK TRANSACTION FEES**OBJECTIVES**

Compute the fees involved in buying and selling stocks.

Become familiar with the basic vocabulary of stock trading.

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- stockbroker
- broker fee
- commission
- discount broker
- at the market
- limit order
- net proceeds

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- How has the Internet changed the way stock is traded?

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Example 1

Lee made two trades through his online discount broker, We-Trade. We-Trade charges a fee of \$12 per trade. Lee's first purchase was for \$3,456 and his second purchase, later in the day, was for \$2,000. How much did he spend on the day's purchases, including broker fees?

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Garret made two trades in one day with his discount broker that charges \$7 per trade. Garret's first purchase was for \$1,790 and his second purchase was for \$8,456. How much did he spend including broker fees?

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Adriana purchased \$7,000 worth of stock from a broker at Tenser Brokerage. The current value of Adriana's portfolio is \$11,567. What broker fee must she pay?

Tenser Brokerage Fee Schedule	Online Trades	Automated Telephone Trades	Trades Using a Broker
Portfolio value less than \$250,000	\$15 per trade	Online fee plus \$9.50	0.5% commission plus online fee
Portfolio value greater than \$250,000	\$12 per trade	Online fee plus \$9.50	0.4% commission plus online fee

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Jared has a portfolio worth \$500,000. He made 10 telephone trades during the past year, buying and selling \$50,000 worth of stock. What was his total broker fee for the year? Express his total broker fee algebraically if Jared had made b automated telephone trades.

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EXAMPLE 3

Erin purchased \$23,510 worth of stock and paid her broker a 1% broker fee. She sold when the stock price increased to \$27,300, and used a discount broker who charged \$21 per trade. Compute her net proceeds.

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Yolanda purchased stock for \$7,000 and paid a 1.5% broker fee. She sold it for \$6,325 and paid a 0.5% broker fee. Compute her net proceeds.

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Johan purchased stock six years ago for x dollars and paid a 2% broker fee. He sold that stock yesterday for y dollars and paid a discount broker \$35 for the sale. Express his net proceeds algebraically.

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Rob purchased stock for p dollars and paid a flat \$40 broker fee. Rob needed money for a home improvement so he sold it at a loss, for h dollars, plus a 1% broker fee. Express his net proceeds algebraically.

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<p>1-8 STOCK SPLITS</p> <p>OBJECTIVES</p> <p>Calculate the post-split outstanding shares and share price for a traditional split.</p> <p>Calculate the post-split outstanding shares and share price for a reverse split.</p> <p>Calculate the fractional value amount that a shareholder receives after a split.</p>	Financial Algebra © Cengage/South-Western
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<p>Key Terms</p> <ul style="list-style-type: none"> ● stock split ● outstanding shares ● market capitalization or market cap ● traditional stock split ● reverse stock split ● penny stock ● fractional part of a share 	Financial Algebra © Cengage Learning/South-Western
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<p>Why do corporations split stocks?</p> <ul style="list-style-type: none"> ● What are some reasons a stock might split? ● How do you think the perception of change might lead to an increase in sales and market prices? 	Financial Algebra © Cengage Learning/South-Western
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<p>Example 1</p> <p>On December 4, John Deere Corporation (DE) instituted a 2-for-1 stock split. Before the split, the market share price was \$87.68 per share and the corporation had 1.2 billion shares outstanding. What was the presplit market cap for John Deere?</p>	Financial Algebra © Cengage Learning/South-Western
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CHECK YOUR UNDERSTANDING

A corporation has a market capitalization of \$24,000,000,000 with 250M outstanding shares. Calculate the price per share.

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What was the post-split number of shares outstanding for John Deere?

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QualComm, Inc. instituted a 4-for-1 split in November. After the split, Elena owned 12,800 shares. How many shares had she owned before the split?

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What was the post-split market price per share for John Deere in Example 1? How many shares are outstanding? Did the market cap change after the split?

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CHECK YOUR UNDERSTANDING

In October, Johnson Controls, Inc instituted a 3-for-1 split. After the split, the price of one share was \$39.24. What was the pre-split price per share?

Slide 101

Financial Algebra
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On October 15, Palm, Inc. instituted a 1-for-20 reverse stock split. Before the split, the market share price was \$0.64 and there were 580,000,000 shares. What was the post-split share price and number of shares?

Slide 102

Financial Algebra
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A major drugstore chain whose stocks are traded on the New York Stock Exchange was considering a 2-for-5 reverse split. If the pre-split market cap was 1.71B, what would the post-split market cap be?

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Financial Algebra
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Suppose that before a stock split, a share was selling for \$2.35. After the stock split, the price was \$7.05 per share. What was the stock-split ratio?

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EXAMPLE 5

Steve owned 942 shares of Graham Corporation. On January 3, a 5-for-4 split was announced. The stock was selling at \$56 per share before the split. How was Steve financially affected by the split?

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Financial Algebra
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Gabriella owned 1,045 shares of Hollow Corporation at a price of \$62.79. The stock split 3-for-2. How was Gabriella financially affected by the split?

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1-9

DIVIDEND INCOME**OBJECTIVES**

Understand the concept of shareowners splitting the profit of the corporation they own.

Compute dividend income.

Compute the yield for a given stock.

Compute the interest earned on corporate bonds.

Slide 107

Financial Algebra
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- dividend
- dividend income
- income stock
- yield
- growth stock
- preferred stock
- common stock
- corporate bond
- face value
- matures

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If shareholders own a corporation, are they entitled to some of the profits?

- Corporations reinvest part of their profits into new products and services. Do you think this is a good business strategy?

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Roberta is considering purchasing a common stock that pays an annual dividend of \$2.13 per share. If she purchases 700 shares for \$45.16 per share, what would her annual income be from dividends?

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Jacques purchased x shares of a corporation that pays a y dollar annual dividend. What is his annual dividend income, expressed algebraically?

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Elyse owns 2,000 shares of a corporation that pays a quarterly dividend of \$0.51 per share. How much should she expect to receive in a year?

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CHECK YOUR UNDERSTANDING

Monique owns x shares of stock. The quarterly dividend per share is y dollars. Express Monique's annual dividend amount algebraically.

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Kristen owns common stock in Max's Toy Den. The annual dividend is \$1.40. The current price is \$57.40 per share. What is the yield of the stock to the nearest tenth of a percent?

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You bought x shares of a stock for $\$y$ per share. The annual dividend per share is $\$d$. Express the percent yield algebraically.

Slide 115

Financial Algebra
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One share of BeepCo preferred stock pays an annual dividend of \$1.20. Today BeepCo closed at \$34.50 with a net change of $-\$0.50$. What was the stock's yield at yesterday's closing price?

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CHECK YOUR UNDERSTANDING

One share of Skroy Corporation stock pays an annual dividend of \$1.55. Today Skroy closed at x dollars with a net change of +0.40. Express the yield at yesterday's close algebraically.

Slide 117

Financial Algebra
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A stock paid an annual dividend of \$2.14. The stock split 2-for-1. What is the annual dividend after the split?

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A corporation was paying a \$2.10 annual dividend. The stock underwent a 3-for-2 split. What is the new annual dividend per share?

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Adam bought a \$1,000 corporate bond in the Labate Corporation. The bond pays 5.7% interest per year. How much does Adam receive in interest each year from this bond?

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■ CHECK YOUR UNDERSTANDING

If Adam holds the bond from Example 6 for 11 years, how much will he receive in total interest?