

# Money Making

Rational  
Numbers



# Money Moves

# Meet the Author

As education continues to evolve, it's more important than ever to equip students with the skills they need to thrive in a rapidly changing world. As an educator, I take seriously the responsibility of preparing students to become proactive problem-solvers, critical thinkers, and confident individuals ready to tackle complex challenges with resilience and determination. By fostering innovation in the classroom, I strive to create dynamic learning opportunities that promotes collaboration, effective communication, and real-world problem-solving. I believe that true learning builds a strong foundation in conceptual understanding and analytical thinking, while also nurturing reflection as an essential component of lifelong growth.



**Brad A. Spicer**

I am a passionate advocate for problem-based learning with over two decades of experience as a middle school mathematics educator. Throughout my career, I've remained committed to continuous professional growth, earning three Master's Degrees from Wilmington University in Curriculum & Instruction, School Leadership, and Educational Technology. My teaching philosophy centers on fostering critical thinking and problem-solving skills through innovative, engaging instruction. I develop Core Performance Tasks that blend real-world story-driven tasks with mathematical concepts to help students see the relevance of math in their everyday lives.

# The 8 Components

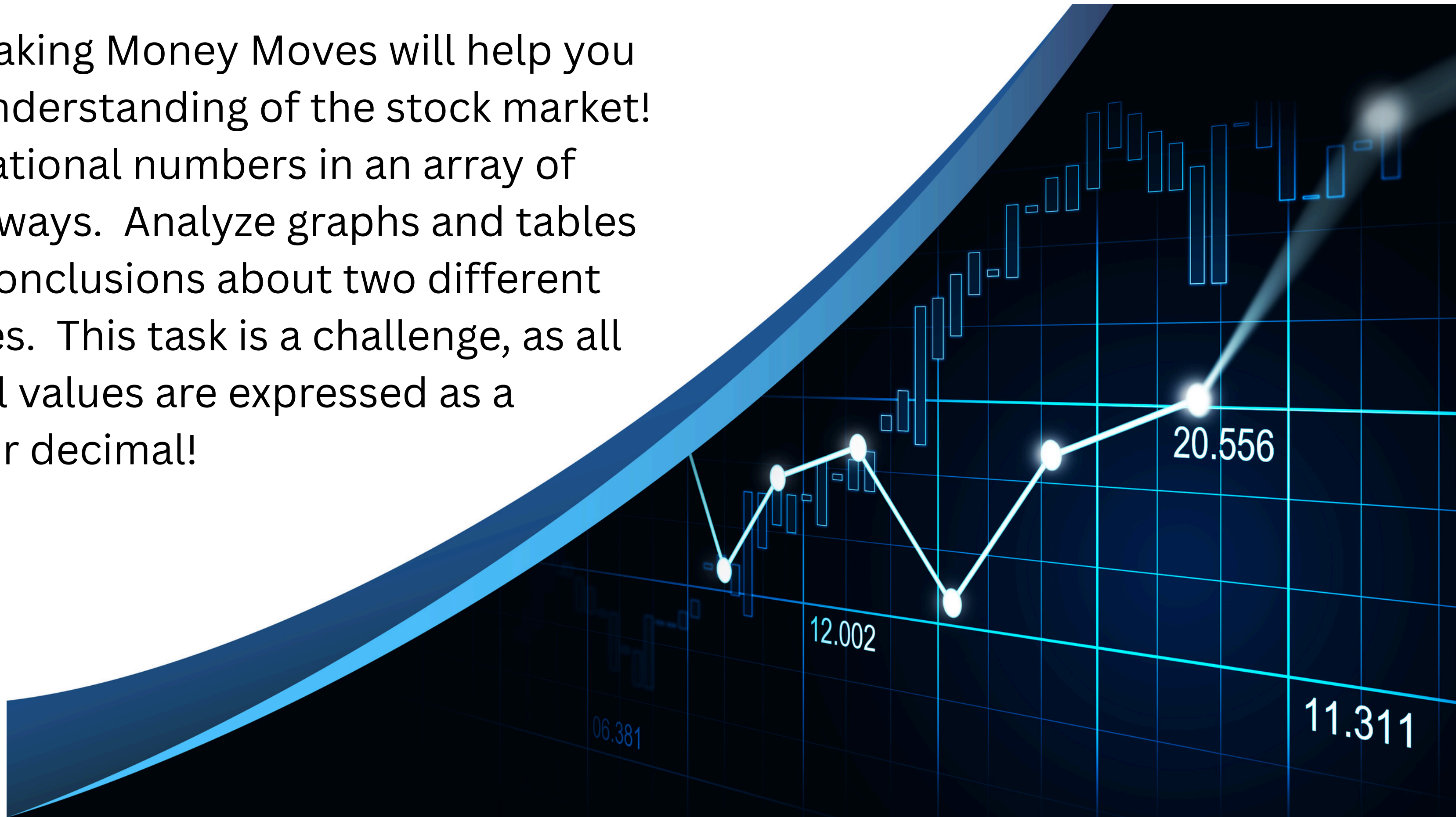


This Core Performance Task is designed to actively engage students and deepen their understanding of how mathematics influences our everyday lives. Through storytelling and role-playing, students will think critically and solve problems as part of this task. It includes eight essential components, all of which are thoughtfully integrated into the instructional design. These components are listed above.



# INTRODUCTION

Money Making Money Moves will help you gain an understanding of the stock market! Explore rational numbers in an array of different ways. Analyze graphs and tables to draw conclusions about two different companies. This task is a challenge, as all numerical values are expressed as a fraction or decimal!





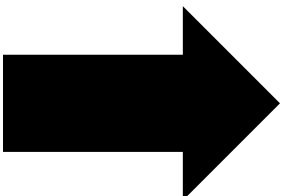
# THE STOCK MARKET

1

Imagine you go to a grocery store. You buy a box of bananas for \$1 each. The next day, you open up a small stand and sell each of your bananas for \$2 each. At the end of the day you'll find that you have doubled the original amount you spent. Perhaps some of the customers might realize that your prices are higher, and they'll go elsewhere. The stock market works in a similar way, although stocks are not physical things. Instead, a stock represents a percentage of the company. For example, if a company has a hundred stocks for sale and you buy just one, that would mean that you own one percent of that company. People buy stocks, or invest in a small parts of a company, in hopes of making money on them. When you buy stock, you become a shareholder, which means you now own a "part" of the company. If the company's profits go up, you "share" in those profits. If the company's profits fall, so does the price of your stock. If you sold your stock on a day when the price of that stock falls below the price you paid for it, you would lose money.

2

The great thing about the stock market is that you can buy stocks from many companies and sell them when you wish. The stock market works in the same way as a flea market. People go to the flea market to check out all of its vendors. The stock market serves as a marketplace for different companies. People can buy and sell stock from many different companies in the stock market. Each company sells its stock at different prices. Stockholders look at the stock market until they find the best prices. The stock market also gives stockholders the freedom to sell stock after it makes a profit. For instance, if someone buys a stock for one dollar and the stock value rises to ten dollars, then that person can sell it to another person for a nine dollar profit. In other words, the stockholder who bought one stock for one dollar made an extra nine dollars by selling it. People who trade in the stock market use online tools and programs to help them monitor how the market in general is moving, as well as how individual companies are doing. Unlike the example, where a customer might just buy one banana, stock traders buy large volumes of stocks.





# THE STOCK MARKET

## Continued

Read paragraphs 1 and 2 on the previous page to help you answer the comprehension questions to the left.

1. In paragraph 1, the author states "When you buy stock, you become a shareholder, which means you now own a "part" of the company." The term shareholder can best be described as which of the following?

- a. A shareholder owns part of a company in the hopes of losing money.
- b. A shareholder owns part of a company and if the company profits go up the shareholder earns a part of the profit.
- c. A shareholder is considered a part owner and can make major decisions for that company, regardless of the percentage of shares owned.
- d. A shareholder is considered a part owner but must own at least 10% of the stock to be able to share the profits.

2. What is the central idea of paragraph 2?

- a. Technology allows stockholders to make better decisions on how they invest their money.
- b. The stock market has strict guidelines that must be followed, making it difficult for stockholders to make decisions on how they invest their money.
- c. Stockholders have flexibility with their decisions on how they wish to invest their money allowing for a greater chance of earning profits.
- d. Stockholders can earn more profits by investing in more than one company.





# Fractions or Decimals?

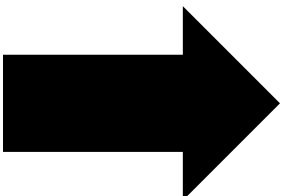
1

Imagine you go to a grocery store. You buy a box of bananas for \$1 each. The next day, you open up a small stand and sell each of your bananas for \$2 each. At the end of the day you'll find that you have doubled the original amount you spent. Perhaps some of the customers might realize that your prices are higher, and they'll go elsewhere. The stock market works in a similar way, although stocks are not physical things. Instead, a stock represents a percentage of the company. For example, if a company has a hundred stocks for sale and you buy just one, that would mean that you own one percent of that company. People buy stocks, or invest in a small parts of a company, in hopes of making money on them. When you buy stock, you become a shareholder, which means you now own a "part" of the company. If the company's profits go up, you "share" in those profits. If the company's profits fall, so does the price of your stock. If you sold your stock on a day when the price of that stock falls below the price you paid for it, you would lose money.



2

The problem with using fractions is that it has to be translated to match the rest of our decimal-based economy. For example, do you know how many shares of stock at  $4 \frac{3}{8}$  's you can purchase for \$4,375? You probably need a few moments with a calculator to realize that \$4,375 will buy you 1,000 shares but it would have been fairly obvious in decimal form (4.375). In 1997, the Common Cents Stock Pricing Act was signed to simplify the stock market by converting the fractions to decimal. This decimalization of the stock market began in August 2000. Besides simplifying the market, decimalization has dramatically changed how the stock market functions.





# Fractions or Decimals?

## Continued

Read paragraphs 1 and 2 on the previous page to help you answer the comprehension questions to the left.

**1. Why did American stock exchanges use fractions as opposed to decimals from 1792-2000?**

- a. The real was the Spanish Silver dollar and divided into eight parts.
- b. The stock market could be based on counting with your hands.
- c. The decimal system would not work because of the Spanish dollar.
- d. The U.S. modeled their system off of Spain, mainly because the U.S. dollar's value was based on the value of the Spanish Real which divided into eight parts.

**2. What is the central idea of paragraph 2?**

- a. When using fractions, they have to be translated to match the rest of our decimal based economy.
- b. The Common Cents Stock Pricing Act was signed in 1997.
- c. The decimalization of the stock market simplified how shares and earnings/losses were calculated.
- d. The decimalization of the stock market began in August 2000.





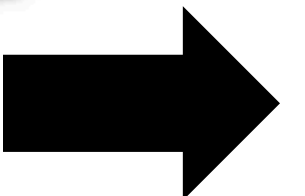
# Battle of the Tech Companies

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SLINK Inc. is an up and coming technology corporation located in Northern California. Slink Inc. pioneered a form of computing loved by the most demanding computer users in the world — scientists, designers, artists, and gamers. They built the equivalent of a time machine! Fueled by the high demand for better 3D graphics, and the massive scale of the gaming market, Slink Inc. has evolved the GPU into a computer brain that integrates virtual reality, high performance computing, and artificial intelligence.

SLINK Inc.'s main competitor in the tech industry is the GIGGY Tech Corporation. Giggy Tech is among the World's top 10 providers of servers. Giggy Tech delivers total solutions in the field of information and communication technology. The Giggy Tech Corporation is the world's 7th largest IT services provider. The corporation chiefly makes computing products and has approximately 159,000 employees and its products and services are available in over 100 countries!

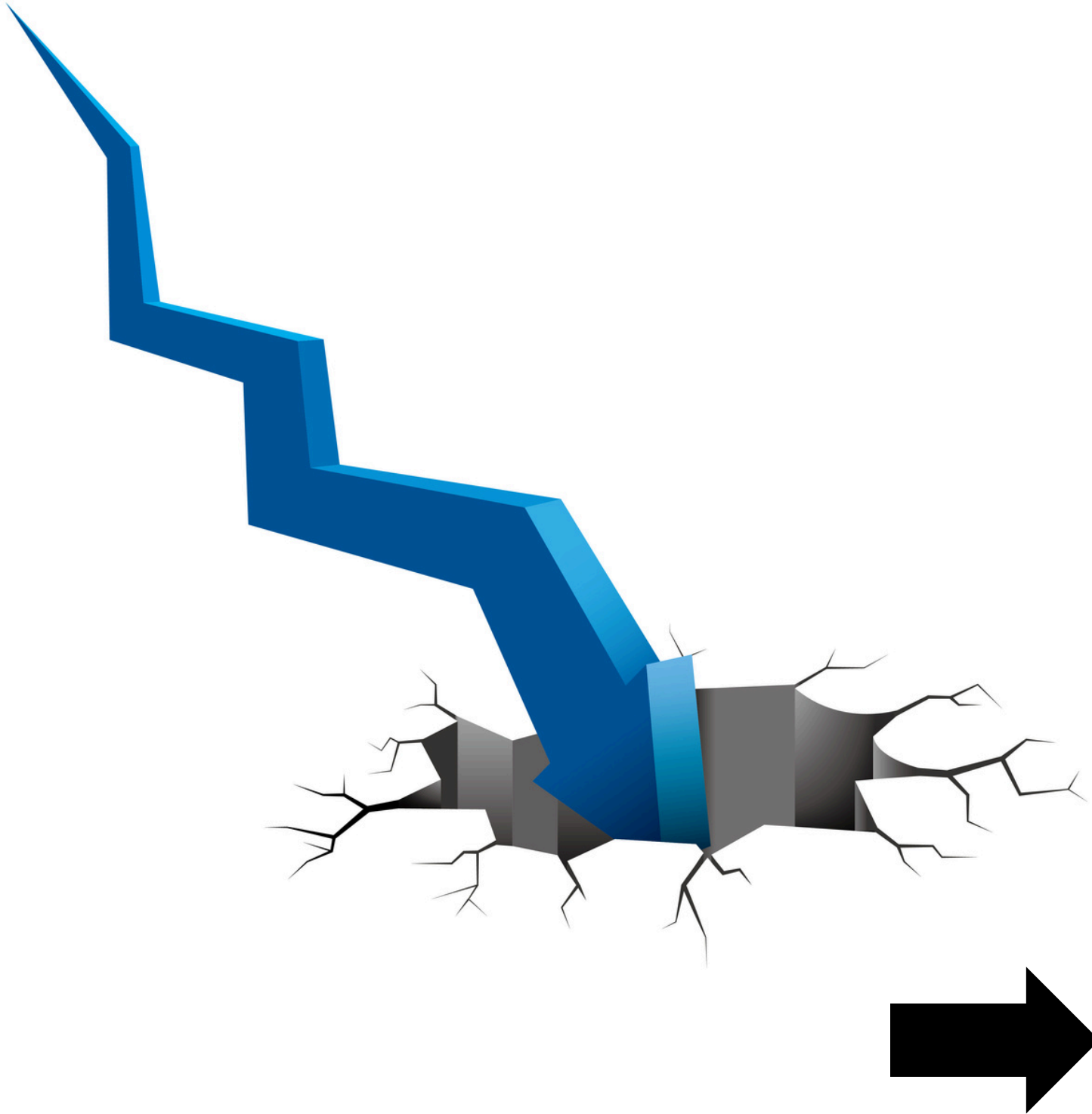
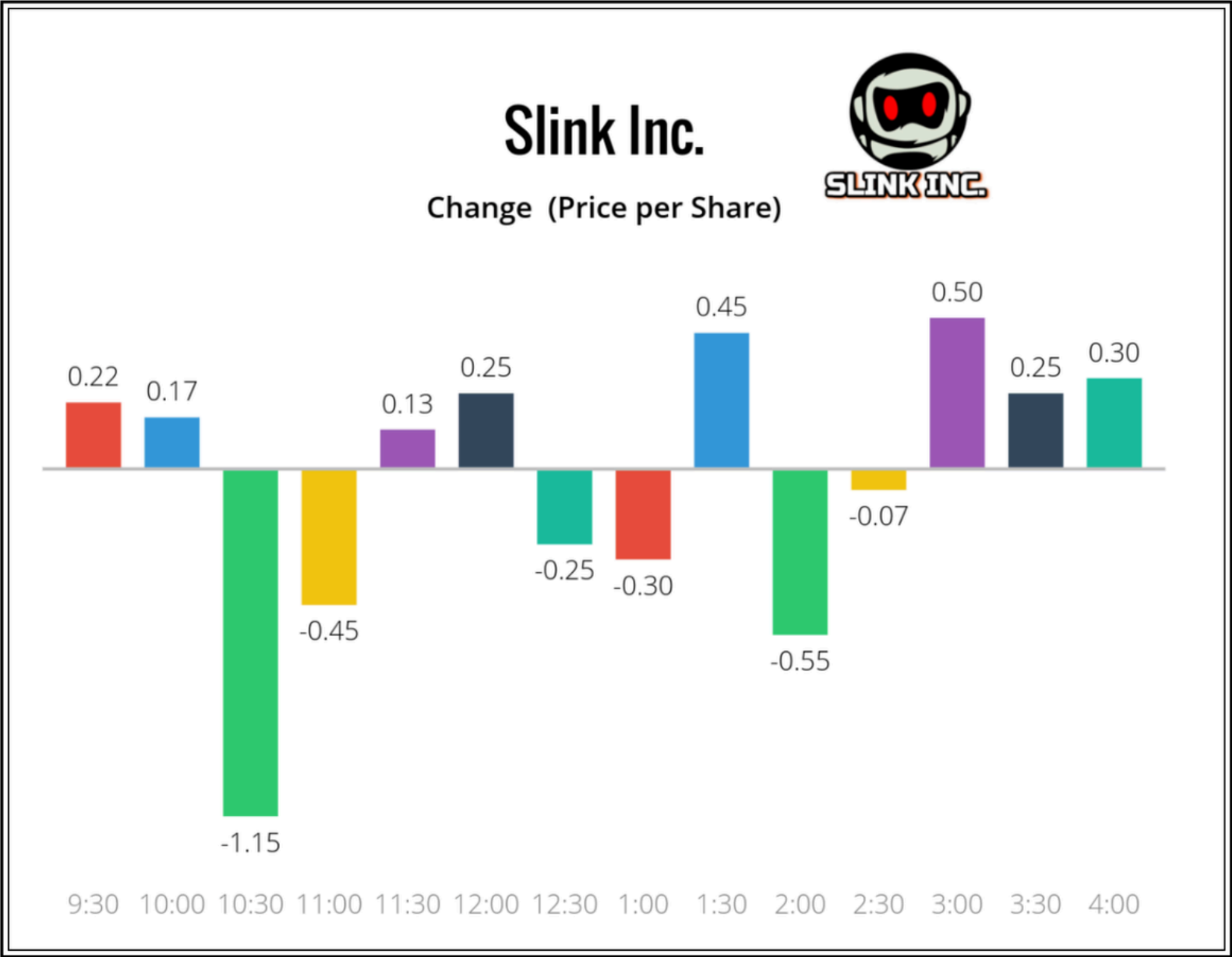




# Battle of the Tech Companies

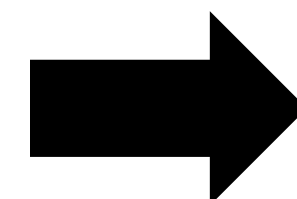
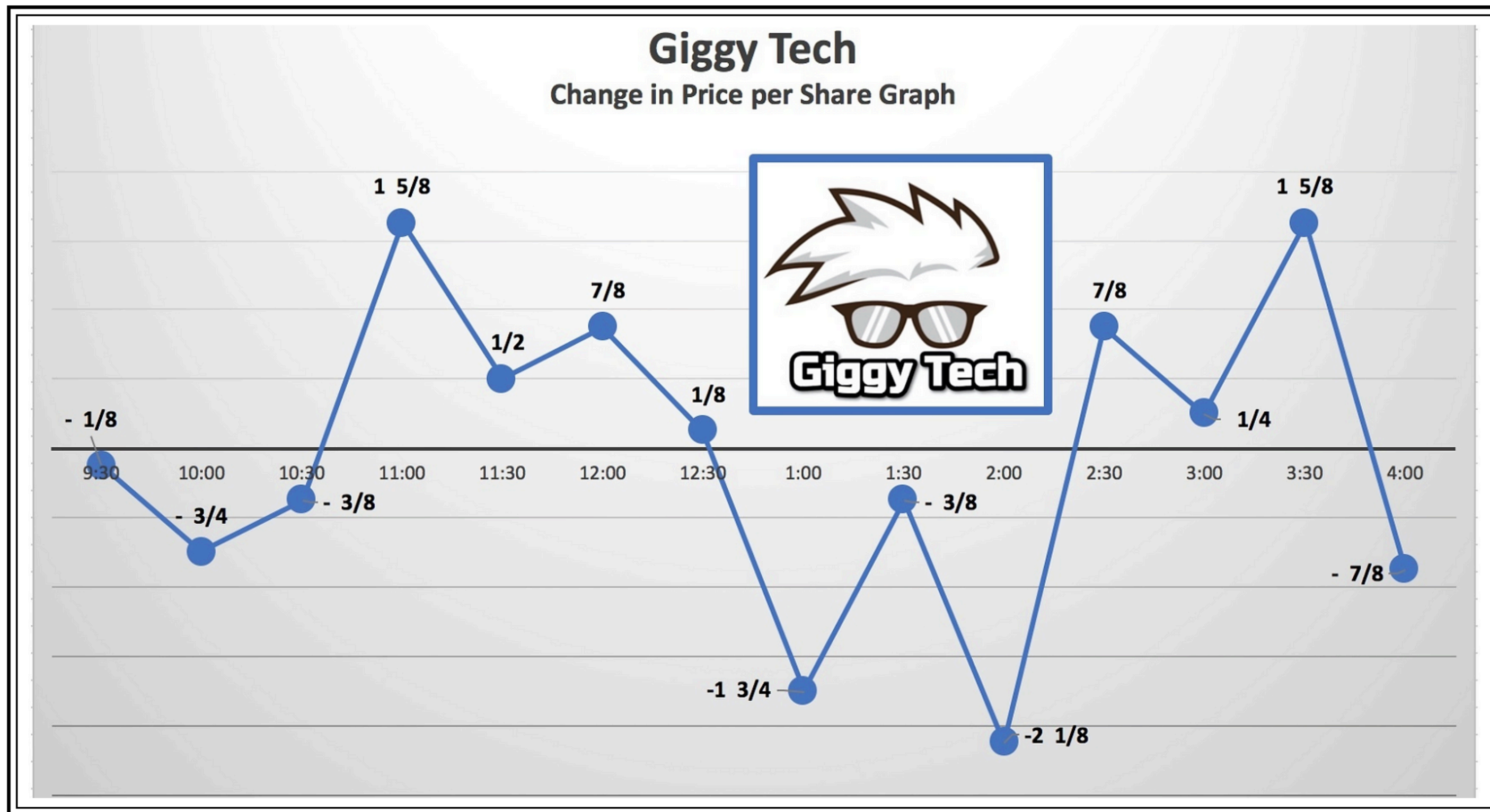
## Continued

On this page and the next you will find two graphs. The graphs represent the Change in the price per share for both Slink Inc. and the Giggy Tech Corporation. The data was collected on October 5, 2024 from the West Coast Stock Exchange.



# Battle of the Tech Companies

## Continued





# **Battle of the Tech Companies**

## **Continued**

1. What is the net gain or the net loss for the Slink Inc. Corporation during the trading day from 9:30 A.M. – 4:00 P.M.

- a. +\$0.08
- b. -\$1.17
- c. -\$0.50
- d. +\$2.27

2. The West Coast Stock Exchange recorded the change in the price per share for Slink Inc. every 30 minutes from 9:30 A.M. – 4:00 P.M. What is the average change in the price per share during this time frame? (Round to the nearest penny)

- a. - \$0.39
- b. +\$0.05
- c. +\$0.07
- d. -\$0.04





# **Battle of the Tech Companies** Continued

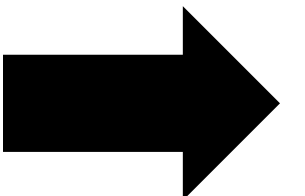
3. If Slink Inc. started the trading day at a price of \$92.50 per share (9:00 A.M), what was the closing price for Slink Inc. at the end of the trading day (4:00 P.M.)?

- a. \$92.00
- b. \$91.70
- c. \$91.02
- d. \$92.50



4. During which time of the trading day was Slink Inc.'s stock at its highest price?

- a. 9:30 A.M.
- b. 10:00 A.M.
- c. 11:00 A.M.
- d. 4:00 P.M.





# Battle of the Tech Companies

Continued



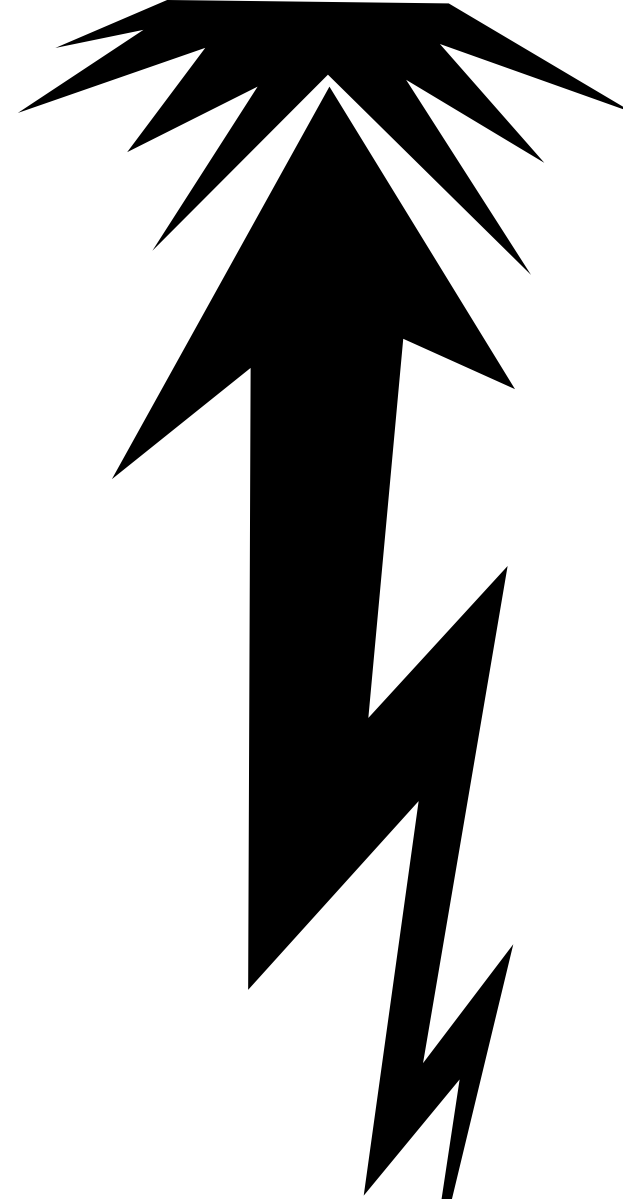
**SLINK INC.**

5. What is the net gain or the net loss for the Giggy Tech. Corporation stock during the trading day from 9:30 A.M. – 4:00 P.M.?

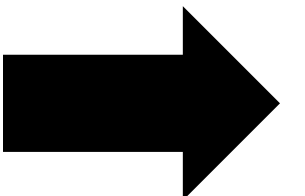
- a. -1
- b.  $\frac{3}{4}$
- c.  $-\frac{1}{2}$
- d.  $-\frac{1}{4}$

6. The West Coast Stock Exchange recorded the change in the price per share for Giggy Tech every 30 minutes from 9:30 A.M. – 4:00 P.M. What is the average change in the price per share during this time frame?

- a.  $-\frac{1}{28}$
- b.  $-\frac{1}{16}$
- c.  $-\frac{1}{56}$
- d.  $-\frac{3}{4}$



**Giggy Tech**





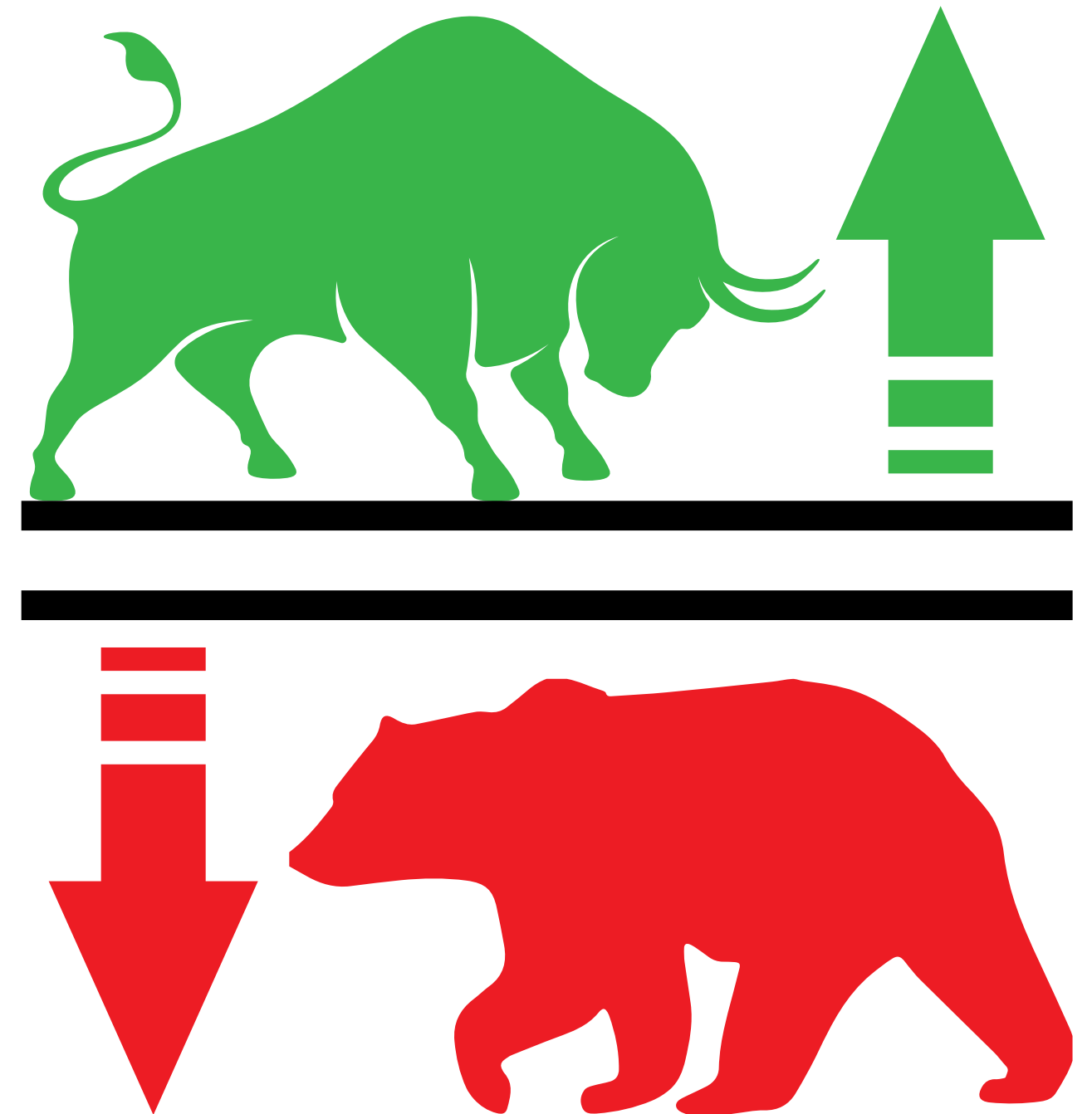
# Battle of the Tech Companies Continued

7. If Giggy Tech ended the trading day at a price of  $\$93 \frac{1}{4}$  per share (4:00 P.M), what was the price for Giggy Tech at the opening bell (9:00 A.M.)?

- a.  $\$93 \frac{3}{4}$
- b.  $\$92 \frac{3}{4}$
- c.  $\$93 \frac{1}{8}$
- d.  $\$93 \frac{1}{4}$

8. After analyzing both graphs, which statement accurately summarizes the data shown?

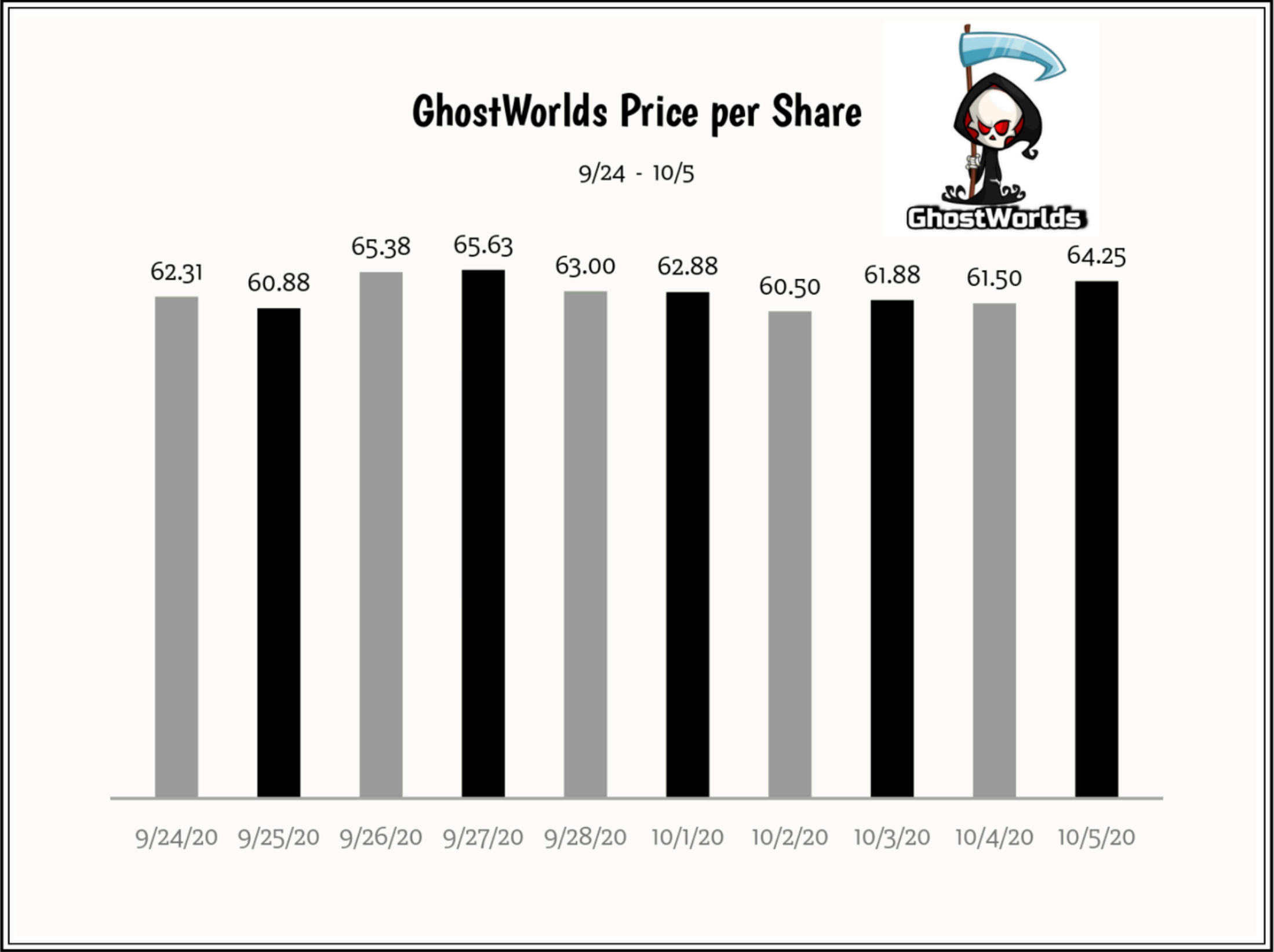
- a. Giggy Tech outperformed Slink Inc. stock at the West Coast Stock Exchange closing bell.
- b. Slink Inc. had less negative changes in the price per share at the West Coast Stock Exchange closing bell.
- c. Slink Inc. and Giggy Tech stock both earned approximately the same net loss at the West Coast Stock Exchange closing bell.
- d. Slink Inc. outperformed Giggy Tech stock at the West Coast Stock Exchange closing bell.



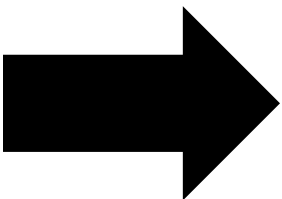


# Stocks in Action

Ghostworlds, Inc. is a full service Design and Fabrication Animatronics Studio that specializes in creating Haunted Attractions and everything that goes into them.



Utilize the graph above to answer the questions on the following Page.



# Stocks in Action Continued

1. What is the median price per share during the time frame (9/24 - 10/5) shown in the GhostWorlds Price per Share graph? (Round to the nearest hundredth)

- a. \$62.94
- b. \$61.88
- c. \$62.60
- d. \$62.88

2. If a stockholder's investment yielded \$12,600.00 at the closing bell and the price per share at the close was \$63.00, how many shares of the stock did the stockholder own?

- a. 793,800
- b. 200.6
- c. 260
- d. 200

3. If the stockholder owned 200 shares of GhostWorld's stock, what did the stockholder earn from September 24, 2018 to October 5, 2018?

- a. + \$12,850.00
- b. + \$12,462.00
- c. + \$388.00
- d. + \$420.00





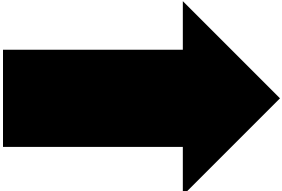
# Stocks in Action Continued

Mystic Media is a leading media and marketing company with unparalleled local-to-national reach, successfully connecting consumers, communities and businesses. Utilizing innovations in technology, digital media and print publishing, their 360° storytelling is offered in markets all across the U.S.



| 52<br>Week<br>Hi               | 52<br>Week<br>Lo               | Stock        | Symbol | Hi                             | Lo                             | Close<br>10/5/18               | Close<br>10/4/18 | Change                         |
|--------------------------------|--------------------------------|--------------|--------|--------------------------------|--------------------------------|--------------------------------|------------------|--------------------------------|
| 80 <sup>3</sup> / <sub>8</sub> | 48 <sup>3</sup> / <sub>4</sub> | Mystic Media | MYM    | 77 <sup>1</sup> / <sub>4</sub> | 74 <sup>1</sup> / <sub>4</sub> | 74 <sup>5</sup> / <sub>8</sub> |                  | -3 <sup>1</sup> / <sub>2</sub> |

Utilize the graph above to answer the questions on the following Page.





# Stocks in Action Continued

1. Mystic Media closed at  $\$74\frac{5}{8}$  per share on 10/5/18. This closing price created a change in the price per share from the previous day of  $\$3\frac{1}{2}$ . What was the closing price per share for Mystic Media stock on 10/4/18?

- a.  $\$71\frac{1}{8}$
- b. \$7
- c.  $\$78\frac{1}{8}$
- d.  $\$74\frac{1}{4}$

3. If you were to take your shares of Mystic Media stock and sell them on the day of the 52 Week Hi, what would be your profit from purchasing Mystic Media stock? (Round to the nearest whole number)

- a. \$16,488
- b. \$6,488
- c. \$648
- d. \$1,648

2. When evaluating Mystic Media's 52 Week Hi and the 52 Week Lo you see a drastic difference in the price per share. If you were to invest \$10,000 on the day of the 52 Week Lo, how many shares of Mystic Media stock would you own? Convert the total shares from fractional form to decimal form.

- a. 205.13 shares
- b. 20.13 shares
- c. 200.56 shares
- d. 214.56 shares





# Stocks in Action

## Continued

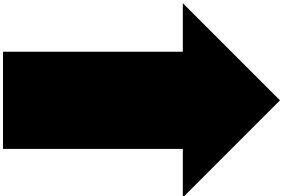
The Raptor is a social media agency. They embody innovation and employ the top creative talent to keep organizations in front of the competition through social media strategies.



The Raptor Corporation  
Closing Price per Share



The Raptor Corporation  
Closing Price per Share





# Stocks in Action

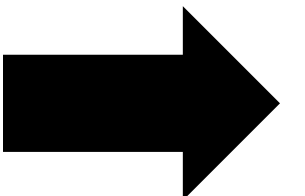
## Continued

1. A stockholder has  $155 \frac{1}{16}$  shares of The Raptor Corporation. How much money did the stockholder have on October 9<sup>th</sup> at the closing bell on the West Coast Stock Exchange? (Convert Fractions to decimals)

- a. approximately \$9,920
- b. approximately \$10,001
- c. approximately \$17,839
- d. approximately \$15,650

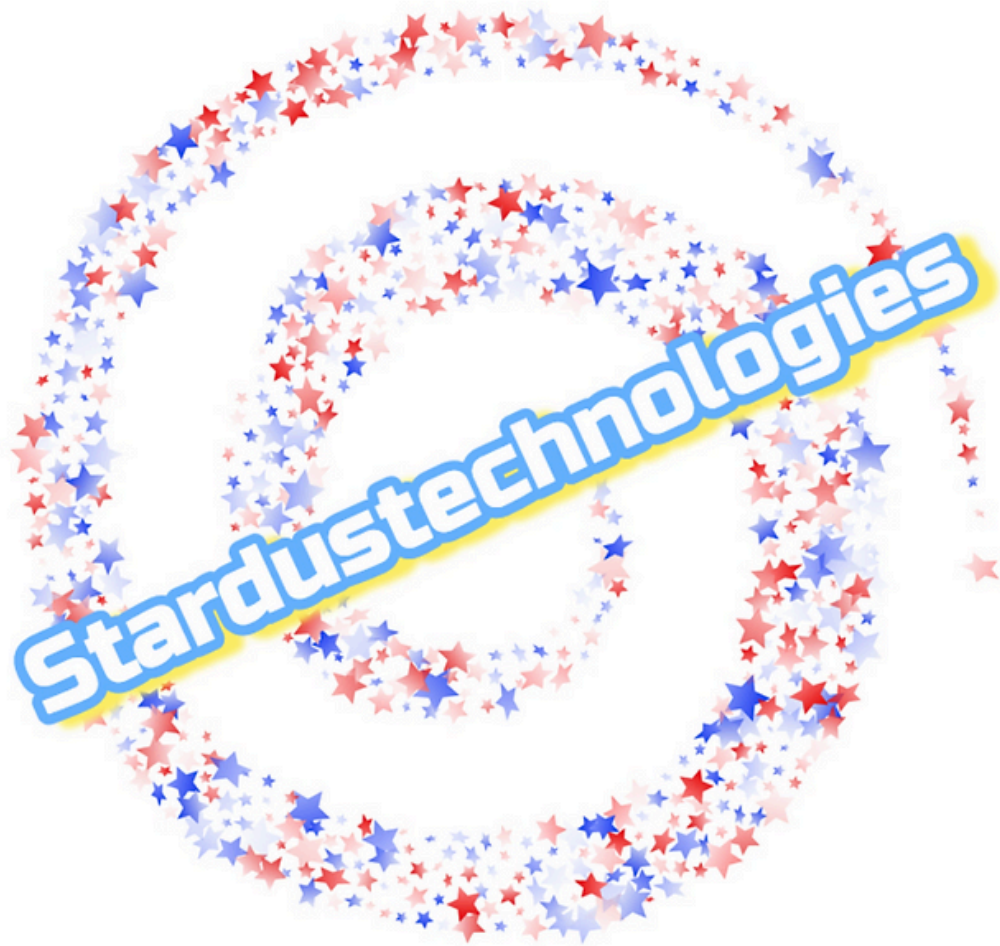
2. Utilize The Raptor Corporation closing Price per Share for October 10<sup>th</sup>. How much money did the stockholder lose from October 9<sup>th</sup>-October 10<sup>th</sup>? (Convert Fractions to decimals)

- a. approximately \$9,400
- b. approximately \$4
- c. approximately \$600
- d. approximately \$1400

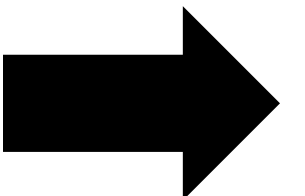


# **Stocks in Action** Continued

Imaginavigations is home to premier global media brands that create compelling entertainment content - including television programs, motion pictures, short-form content, games, consumer products, podcasts, live events and social media experiences - for audiences in more than 180 countries on various platforms and devices.

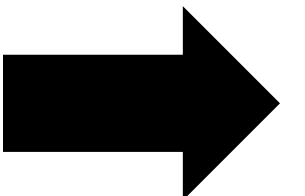
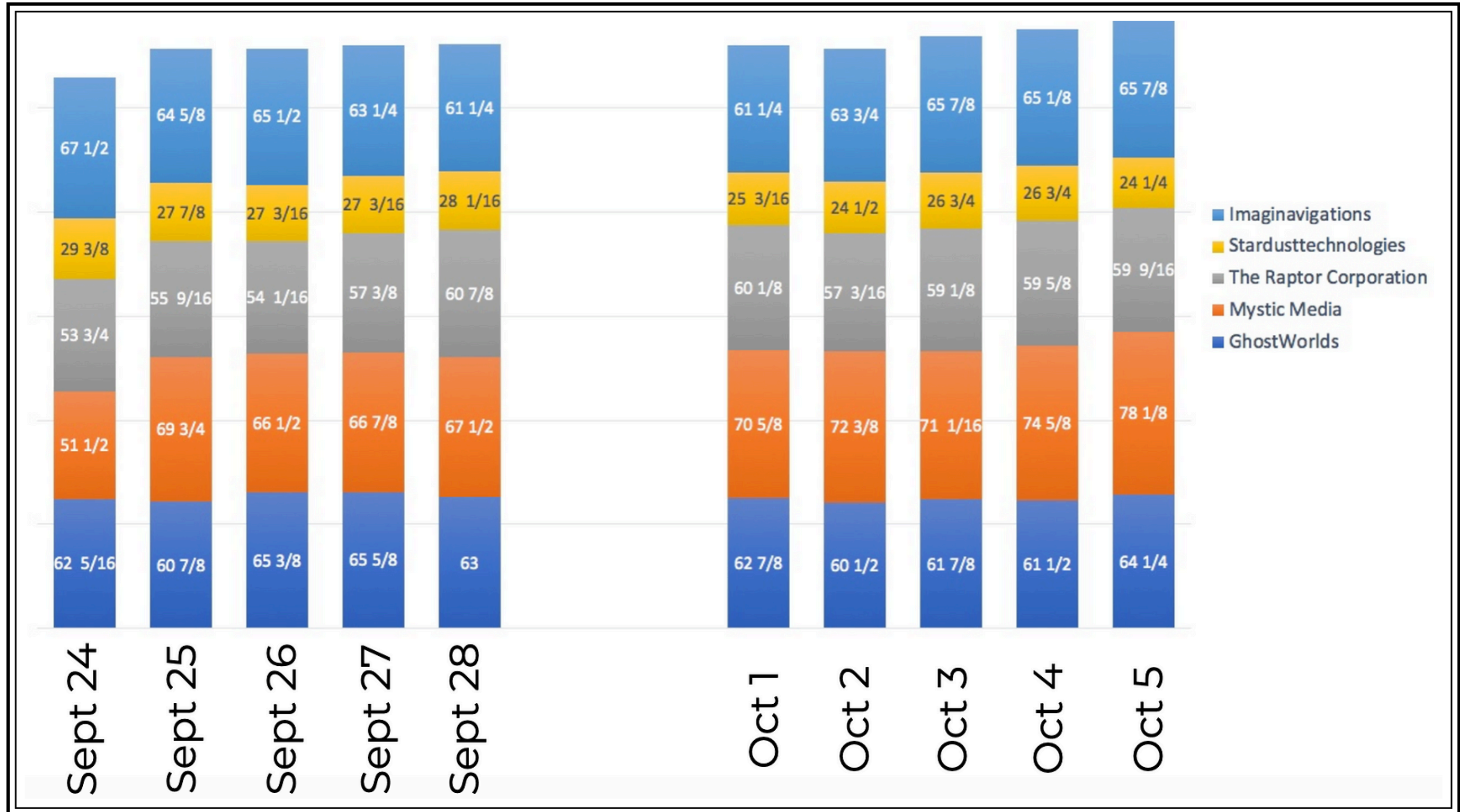


Stardusttechnologies a global provider of enterprise cloud computing, is empowering businesses of all sizes on their journey of digital transformation. Stardusttechnologies provides leading-edge capabilities in software as a service, platform as a service, infrastructure as a service, and data as a service.





# Stocks in Action Continued



# Stocks in Action

## Continued

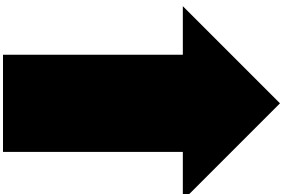
1. A stockholder invests \$25,000 on September 28th into all five companies displayed on the graph. The stockholder invests \$5000.00 into each company. How many more shares of Stardusttechnologies than Imaginavigations does the stockholder own? (Round shares to the nearest whole number)

- a. approximately 97 shares
- b. approximately 180 shares
- c. approximately 82 shares
- d. approximately 1031 shares



2. Utilizing the number of shares the stockholder purchased on October 28th, how much profit would the stockholder make on the investment for GhostWorld's on October 5th? (Round to the nearest whole number)

- a. approximately \$76.00
- b. approximately \$63.00
- c. approximately \$526.00
- d. approximately \$5700.00





**3. Utilizing the number of shares the stockholder purchased on October 28th, how much profit would the stockholder make on the investment for Mystic Media on October 5th? (Round to the nearest whole number)**

- a. no profit was made
- b. approximately \$782.00
- c. approximately \$64.00
- d. approximately \$550.00

**4. Utilizing the number of shares the stockholder purchased on October 28, 2018, which company produced the greatest profit for the stockholder's investment on October 5, 2018? (Round to the nearest whole number)**

- Mystic Media
- GhostWorlds
- Stardusttechnologies
- The Raptor Corporation

# Stocks in Action

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## Continued

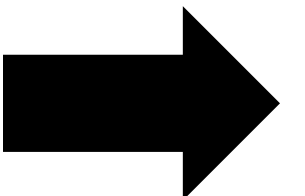


# Slink Inc.'s Day on the Market

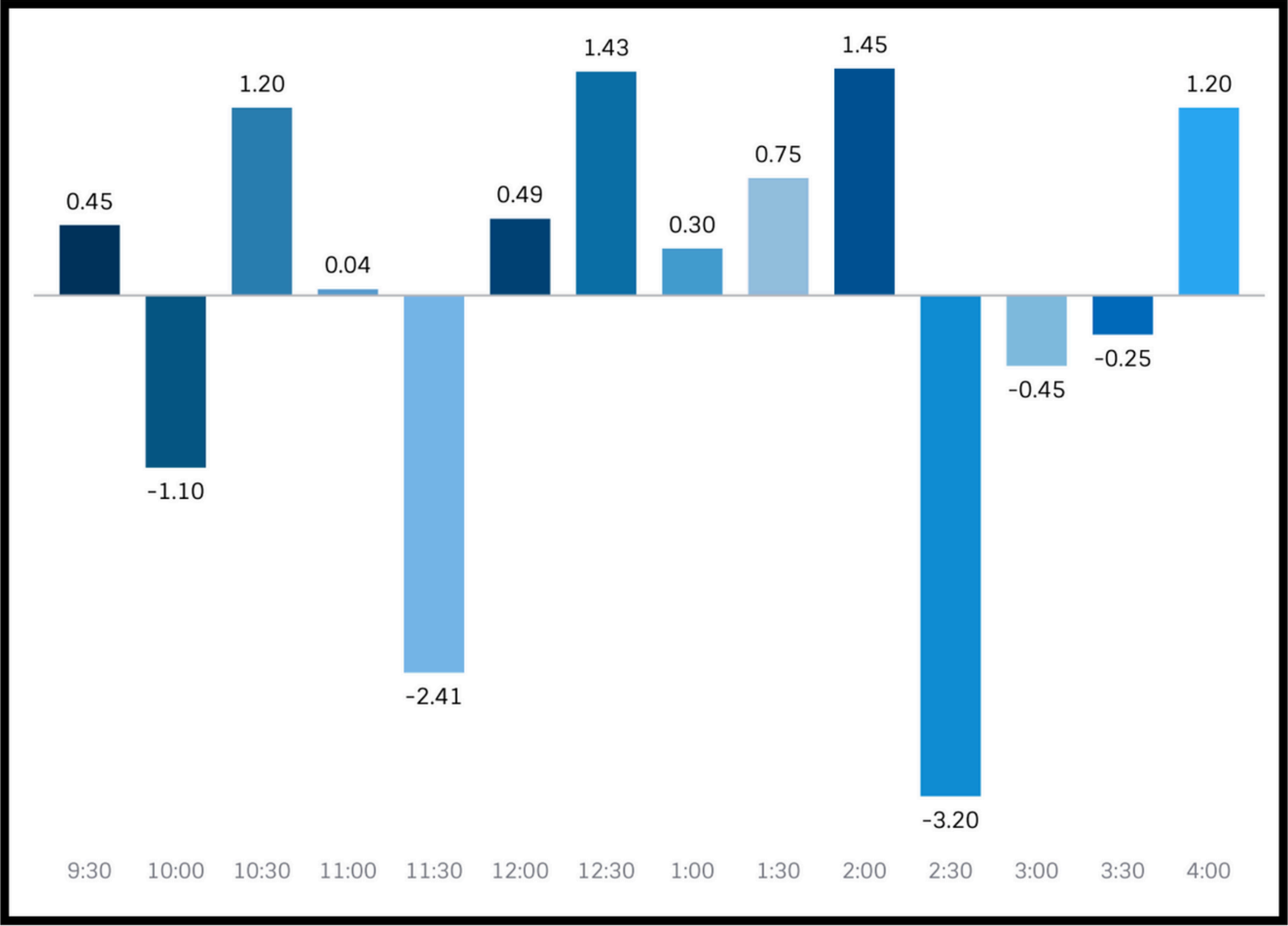
SLINK Inc. is an up and coming technology corporation located in Northern California. The company trades on the West Coast Stock Exchange. The following graph shows the change in the price of Slink Inc. stock over one day.



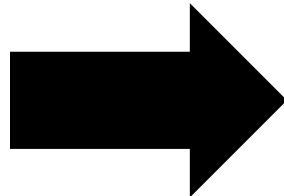
**SLINK INC.**







Use the graph to the right to help you answer Questions 1–5 on the following pages.



# Slink Inc.'s Day on the Market

## Continued

1. Calculate the average change for SLINK Inc. stock from 9:30 – 12:30? Which of the following represents the average change? (ROUND TO THE NEAREST HUNDREDTH)

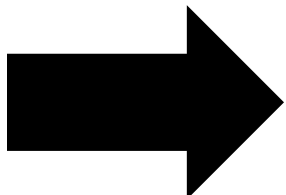
- a. \$0.10
- b. approximately \$0.01
- c. approximately \$1.01
- d. approximately \$0.14

2. Calculate the average change for SLINK Inc. stock from 1:00 – 4:00? Which of the following represents the average change? (ROUND TO THE NEAREST HUNDREDTH)

- a. approximately -\$0.02
- b. -\$0.20
- c. approximately -\$0.03
- d. approximately -\$2.85



Refer to the table above to organize your data. Completing it will better prepare you to answer the remaining questions.



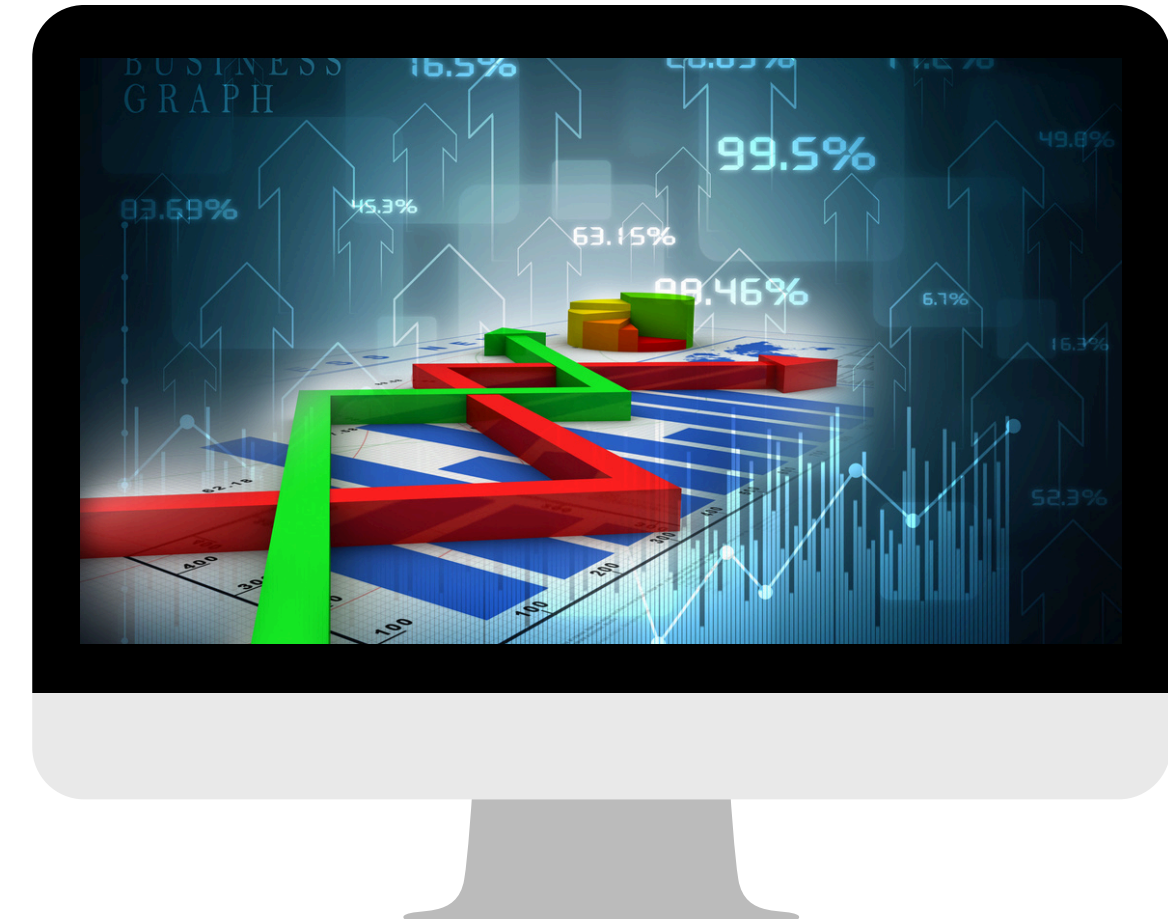
| Time     | Change in Price | Cost per Share |
|----------|-----------------|----------------|
| 9:00 AM  | -               | \$110.00       |
| 9:30 AM  |                 |                |
| 10:00 AM |                 |                |
| 10:30 AM |                 |                |
| 11:00 AM |                 |                |
| 11:30 AM |                 |                |
| 12:00 PM |                 |                |
| 12:30 PM |                 |                |
| 1:00 PM  |                 |                |
| 1:30 PM  |                 |                |
| 2:00 PM  |                 |                |
| 2:30 PM  |                 |                |
| 3:00 PM  |                 |                |
| 3:30 PM  |                 |                |
| 4:00 PM  |                 |                |



# Slink Inc.'s Day on the Market Continued

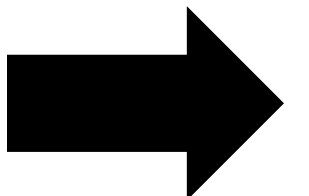
3. The West Coast Stock Exchanges opening bell sounded at 9:00 AM Slink Inc. opened the day at a trading value of \$110.00 per share. If Slink Inc. opened at \$110.00 per share, at what time during the trading day was Slink Inc.'s Cost Per Share at its **lowest** point?

- a. 2:30 PM
- b. 10:00 AM
- c. 1:00 PM
- d. 11:30 AM



4. The West Coast Stock Exchanges opening bell sounded at 9:00 AM Slink Inc. opened the day at a trading value of \$110.00 per share. If Slink Inc. opened at \$110.00 per share, at what time during the trading day was Slink Inc.'s **Cost Per Share at its highest point?**

- a. 4:00 PM
- b. 2:00 PM
- c. 10:00 AM
- d. 11:30 AM



5. What conclusions can you draw (minimum of 3) about how Slink Inc. performed on the West Coast Stock Exchange on that particular day?

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**Slink Inc.'s Day on the Market**

**Continued**



6. Would you recommend to create a line graph to represent the changes in price over the course of the day opposed to a bar graph? Why or why not?

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# Taking a Look Back Day

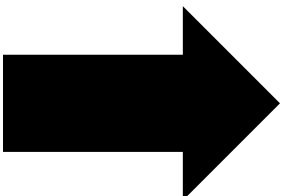
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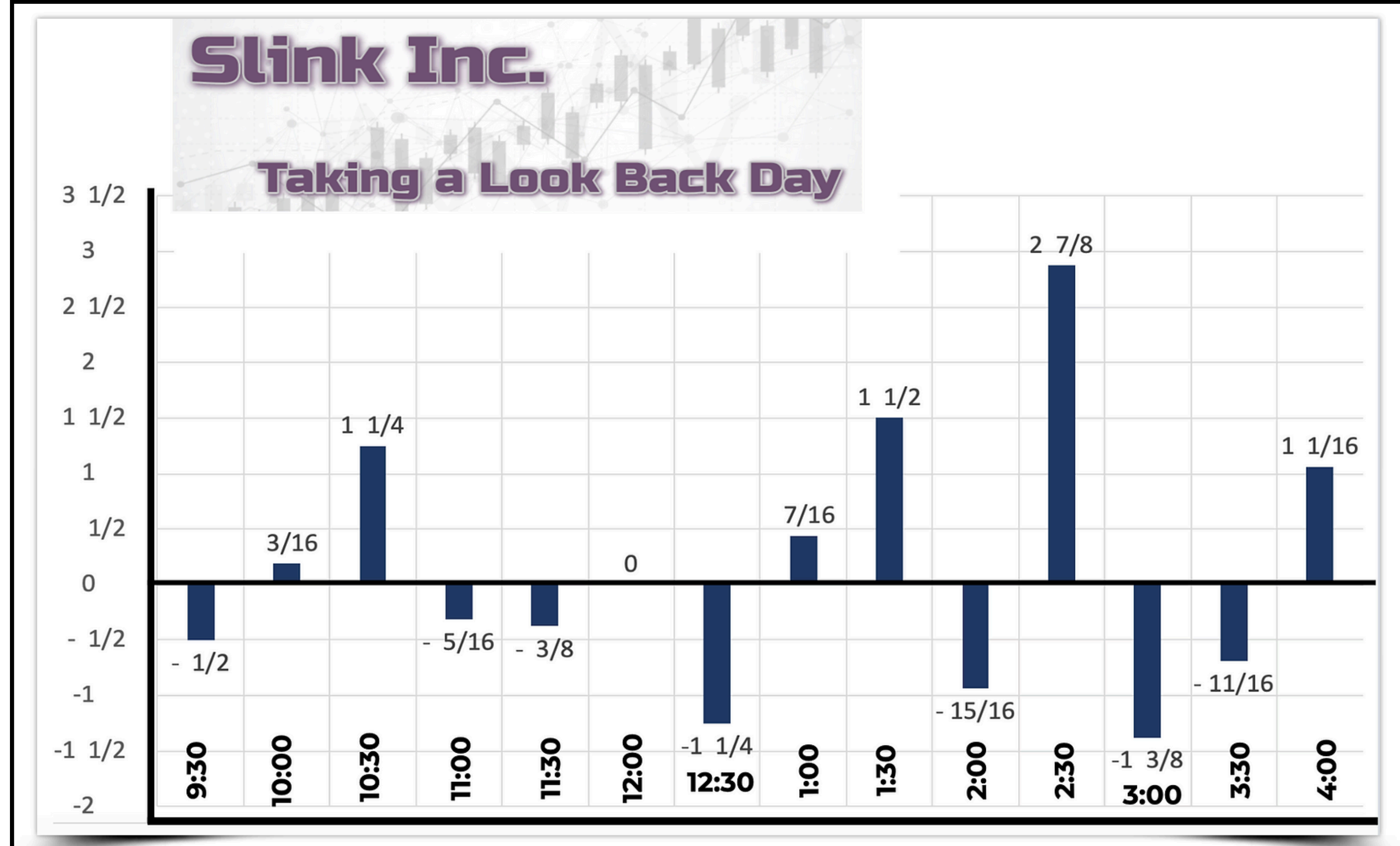
Before April 9, 2001, when the Securities and Exchange Commission ordered all U.S. stock markets to switch to the decimal system, prices were reported and stocks were denominated in fractions - in one-sixteenths ( $1/16$ ), to be exact.



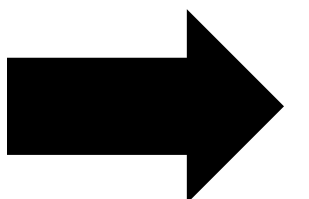
2

The West Coast Stock Exchange declared that October 21, 2020, would be "Taking A Look Back" Day. The stock exchange decided to revert back to reporting stock prices as fractions just as they did prior to 2001.





Prior to April 9, 2001, U.S. stock prices were quoted in fractions—specifically in sixteenths (1/16). Then the Securities and Exchange Commission mandated that all U.S. stock markets adopt the decimal system.





1. Calculate the average change for SLINK Inc. stock from 9:30 – 12:30? Which of the following represents the average change?

a.  $-\frac{1}{7}$  or -\$0.14

b.  $-\frac{1}{5}$  or -\$0.20

c.  $\frac{1}{14}$  or -\$0.07

d.  $\frac{1}{7}$  or +\$0.14



Continued

2. Calculate the average change for SLINK Inc. stock from 1:00 – 4:00? Which of the following represents the average change?

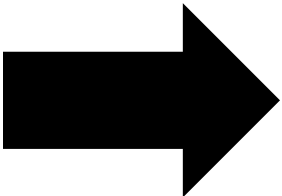
a.  $\frac{17}{21}$  or \$0.81

b.  $\frac{23}{56}$  or +\$0.41

c. 0 (*EVEN*)

d.  $\frac{9}{19}$  or -\$0.47

| Time     | Change in Price | Cost per Share    |
|----------|-----------------|-------------------|
| 9:00 AM  | -               | $112\frac{5}{16}$ |
| 9:30 AM  |                 |                   |
| 10:00 AM |                 |                   |
| 10:30 AM |                 |                   |
| 11:00 AM |                 |                   |
| 11:30 AM |                 |                   |
| 12:00 PM |                 |                   |
| 12:30 PM |                 |                   |
| 1:00 PM  |                 |                   |
| 1:30 PM  |                 |                   |
| 2:00 PM  |                 |                   |
| 2:30 PM  |                 |                   |
| 3:00 PM  |                 |                   |
| 3:30 PM  |                 |                   |
| 4:00 PM  |                 |                   |



# Taking a Look Back Day

## Continued



3. The West Coast Stock Exchanges opening bell sounded at 9:00 AM Slink Inc. opened the day at a trading value of  $112 \frac{5}{16}$  per share. If Slink Inc. opened at  $112 \frac{5}{16}$  per share, at what time during the trading day was Slink Inc.'s **Cost Per Share at its lowest point?**

- a. 3:00 PM
- b. 9:30 AM
- c. 12:00 NOON
- d. 12:30 PM

4. The West Coast Stock Exchanges opening bell sounded at 9:00 AM Slink Inc. opened the day at a trading value of  $112 \frac{5}{16}$  per share. If Slink Inc. opened at  $112 \frac{5}{16}$  per share, at what time during the trading day was Slink Inc.'s **Cost Per Share at its highest point?**

- a. 4:00 PM
- b. 2:30 PM
- c. 9:00 AM
- d. 1:30 PM