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Learn through sports

PRINTABLE · GRADES 6-8 · AGES 11–14

# Scoreboard Percent Change

Basketball scoreboards keep flipping — leads grow, deficits shrink, and comebacks start with one big run. Find the percent increase or decrease for each made-up scoreboard. Round every answer to the nearest whole percent.

Name _____

Date _____

MATH TOOLKIT

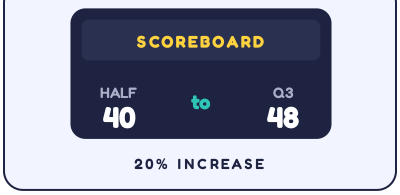
**Formula**
|new − old| ÷ old × 100

**Increase**
(new − old) ÷ old × 100 when the value goes up

**Decrease**
(old − new) ÷ old × 100 when the value goes down

**Round**
to the nearest whole percent

**Check**
label ↑ or ↓ and name the unit: %




ROOKIE

**1** At halftime the Crestview Coyotes had **40** points. By the end of the third quarter they had **48** points. What was the percent **increase** in their score from halftime to the end of the third quarter?

WORK SPACE

_____ %

ROOKIE

**2** Maya Chen scored **60** points last game and **45** points this game. What was the percent **decrease** in her scoring?

WORK SPACE

_____ %

STARTER

**3** The Silverbrook Sparks scored **64** points in game 1 and **80** points in game 2. What was the percent **increase** from game 1 to game 2?

WORK SPACE

_____ %

STARTER

**4** The Northgate Nighthawks trailed by **20** points after the first quarter. By the end of the second quarter the deficit was **12** points. What was the percent **decrease** in their deficit?

WORK SPACE

_____ %

PRO

**5** Eli Grant scored **72** points in October and **90** points in November. What was the percent **increase** from October to November?

WORK SPACE

_____ %

PRO

**6** The Stonebridge Stags' lead shrank from **15** points to **12** points. What was the percent **decrease** in the lead?

WORK SPACE

_____ %

ALL-STAR

**7** In quarter 1 the Willow Bend Wolves scored **25** points. In quarter 2 they scored **40** points. What was the percent **increase** from quarter 1 to quarter 2?

WORK SPACE

_____ %

CHALLENGE ★

**8** Challenge: The Riverton Rockets had **80** points with four minutes left. They finished with **92** points. What was the percent **increase** in their score over those four minutes?

WORK SPACE

_____ %

## A Halftime Scoreboard

Four made-up teams. Half = points at halftime. Final = points at the end of the game. Round to the nearest whole percent.

| TEAM | HALF | FINAL | % CHANGE |
|---|---|---|---|
| **Crestview Coyotes** | 42 | 56 | |
| **Silverbrook Sparks** | 50 | 40 | |
| **Northgate Nighthawks** | 36 | 54 | |
| **Willow Bend Wolves** | 48 | 60 | |

Made-up teams and scores.
Use the board for every question in A.
Write + for increase or – for decrease in the empty boxes if you like.

1. The Crestview Coyotes went from **42** points at half to **56** at the final. What was the percent **increase**?

   _____ %

2. The Silverbrook Sparks went from **50** points at half to **40** at the final. What was the percent **decrease**?

   _____ %

3. The Northgate Nighthawks went from **36** points at half to **54** at the final. What was the percent **increase**?

   _____ %

4. Which team had the **greatest percent increase** from half to final?

   _____

## B Increase or Decrease?

Name the type of change first, then find the percent. Round to the nearest whole percent.

1. Jordan Pike's scoring went from **24** points to **30** points. Was this a percent **increase** or a percent **decrease**? By what percent?

   WORK SPACE

   _____ · _____ %

2. A 16-point lead shrank to an **8**-point lead. Was this a percent **increase** or a percent **decrease**? By what percent?

   WORK SPACE

   _____ · _____ %

3. Nia Park's free-throw makes rose from **10** to **15**. Was this a percent **increase** or a percent **decrease**? By what percent?

   WORK SPACE

   _____ · _____ %

4. The Stonebridge Stags' deficit grew from **6** points to **9** points. Was this a percent **increase** or a percent **decrease**? By what percent?

   WORK SPACE

   _____ · _____ %

## C Comebacks & Big Runs

Write the formula, plug in the numbers, then round. Show your work in the space.

1. The Riverbend Ravens trailed by **28** points early in the fourth quarter. After a long run, the deficit was only **7** points. What was the percent **decrease** in their deficit?

   WORK SPACE

   _____ %

2. Home crowd for the Sparks was **120** fans last week and **150** fans this week. What was the percent **increase** in attendance?

   WORK SPACE

   _____ %

3. Theo Brooks had a running total of **20** points after quarter 1 and **30** points after three quarters. What was the percent **increase** in his running total?

   WORK SPACE

   _____ %

4. Challenge: Lila Vargas scored **47** points in game 1 and **56** points in game 2. What was the percent **increase**? Round to the nearest whole percent.

   WORK SPACE

   _____ %

# Answer Key (for teachers & parents)

Answers for **Scoreboard Percent Change**, with the work shown. Print pages 1 and 2 for students and keep this page for checking. All percents are rounded to the nearest whole percent. Accept equivalent work (for example, 14/42 = 1/3).

## Page 1 Problems

1. **Answer: 20%**
   (48 − 40) ÷ 40 × 100 = 8 ÷ 40 × 100 = 20.
2. **Answer: 25%**
   (60 − 45) ÷ 60 × 100 = 15 ÷ 60 × 100 = 25.
3. **Answer: 25%**
   (80 − 64) ÷ 64 × 100 = 16 ÷ 64 × 100 = 25.
4. **Answer: 40%**
   (20 − 12) ÷ 20 × 100 = 8 ÷ 20 × 100 = 40.
5. **Answer: 25%**
   (90 − 72) ÷ 72 × 100 = 18 ÷ 72 × 100 = 25.
6. **Answer: 20%**
   (15 − 12) ÷ 15 × 100 = 3 ÷ 15 × 100 = 20.
7. **Answer: 60%**
   (40 − 25) ÷ 25 × 100 = 15 ÷ 25 × 100 = 60.
8. **Answer: 15%**
   (92 − 80) ÷ 80 × 100 = 12 ÷ 80 × 100 = 15.

## A · Halftime Scoreboard

1. **Answer: 33% increase**
   (56 − 42) ÷ 42 × 100 = 14 ÷ 42 × 100 ≈ 33.33, which rounds to 33%.
2. **Answer: 20% decrease**
   (50 − 40) ÷ 50 × 100 = 10 ÷ 50 × 100 = 20%.
3. **Answer: 50% increase**
   (54 − 36) ÷ 36 × 100 = 18 ÷ 36 × 100 = 50%.
4. **Answer: Northgate Nighthawks**
   Coyotes +33%, Sparks −20%, Nighthawks +50%, Wolves +25%. Greatest increase is 50%.

## Quick score

| | |
|---|---|
| Page 1 problems | _____ / 8 |
| A · Halftime Scoreboard | _____ / 4 |
| B · Increase or Decrease | _____ / 4 |
| C · Comebacks & Big Runs | _____ / 4 |
| **Total** | **_____ / 20** |

## Skills practiced

Percent of change · Percent increase · Percent decrease · Ratios & proportions · Word problems · Basketball math

**Teaching tip:** Have students write **old** and **new** above the numbers before they compute. The denominator is always the **original** (old) value — a common mix-up is dividing by the new value. In B4, growing a deficit is still a percent **increase** in the size of the deficit. In A1 and C4, show the unrounded decimal first, then round.

## B · Increase or Decrease?

1. **Answer: increase · 25%**
   (30 − 24) ÷ 24 × 100 = 6 ÷ 24 × 100 = 25%.
2. **Answer: decrease · 50%**
   (16 − 8) ÷ 16 × 100 = 8 ÷ 16 × 100 = 50%.
3. **Answer: increase · 50%**
   (15 − 10) ÷ 10 × 100 = 5 ÷ 10 × 100 = 50%.
4. **Answer: increase · 50%**
   (9 − 6) ÷ 6 × 100 = 3 ÷ 6 × 100 = 50%. The deficit grew, so this is an increase.

## C · Comebacks & Big Runs

1. **Answer: 75%**
   (28 − 7) ÷ 28 × 100 = 21 ÷ 28 × 100 = 75%.
2. **Answer: 25%**
   (150 − 120) ÷ 120 × 100 = 30 ÷ 120 × 100 = 25%.
3. **Answer: 50%**
   (30 − 20) ÷ 20 × 100 = 10 ÷ 20 × 100 = 50%.
4. **Answer: 19%**
   (56 − 47) ÷ 47 × 100 = 9 ÷ 47 × 100 ≈ 19.15, which rounds to 19%.



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