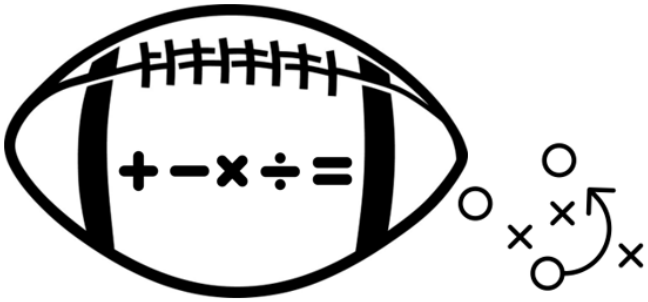
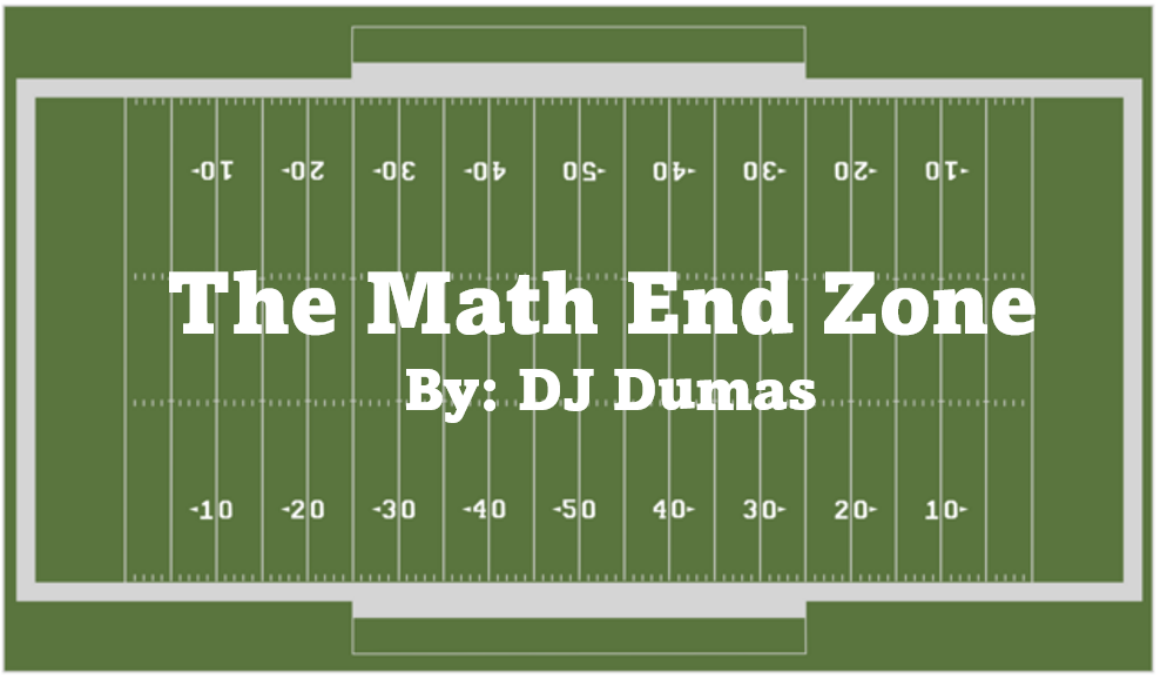




The Math End Zone

By: DJ Dumas

About The Math End Zone

The Math End Zone workbook is designed to help kids ages 5-10 who are aspiring student athletes make the connection between the game of football and mathematics using fundamental football concepts. It also incorporates the importance of goal setting to academic and athletic success.

About the Author

DeShaun (DJ) Dumas is a student-athlete in his junior year in high school who is skilled at math and has a passion for football, business, entrepreneurship, and community service. DJ has excelled in honors and advanced placement (AP) math throughout his high school career and enjoys sharing knowledge with younger athletes who want to be successful on and off the field in junior high school and high school.

Why it Matters

Participation in youth sports contributes to higher levels of academic achievement and creativity, improved social skills, and improved physical and mental health. Having a strong foundation in math promotes problem-solving, reasoning, analytical thinking, and even equips students with the tools they need for financial literacy. Involvement in team sports, such as football, also helps to build skills needed to succeed in life such as accountability, teamwork, goals-setting, and leadership.

Ready to get started? Work to solve the math problems on each worksheet and check your answers in the Play-by-Play section at the end of the workbook. Before you start, be sure to warm up!

Follow DJ at @DumasDeshaun and share your experience with the Math End Zone!

Warm-up 

Name: _____

1. Football motivates me because:

   _____
   _____
   _____
   _____
   _____

2. My goal in life is to:

   _____
   _____
   _____
   _____
   _____

3. Math can help me succeed on and off the field by:

   _____
   _____
   _____
   _____
   _____

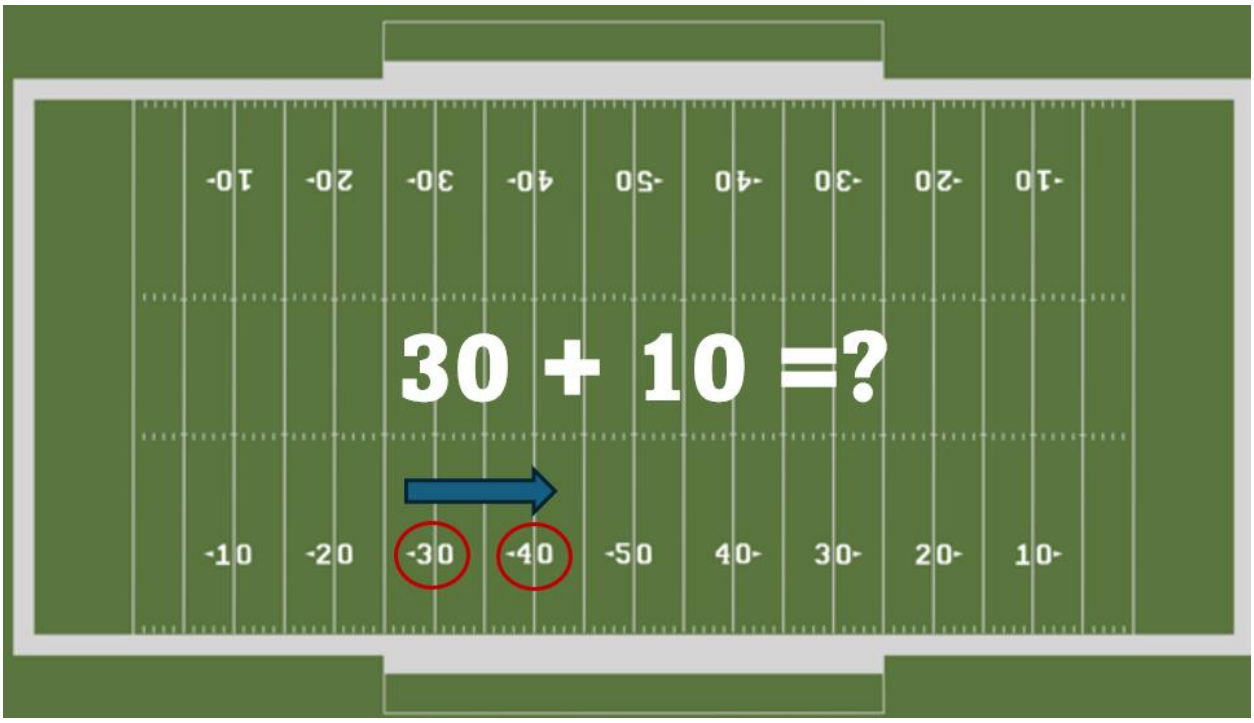
4. My jersey number is: _____

   BONUS: Develop a math equation using your jersey number.

Example: ____+_____ = _____

Addition and Subtraction

Drive Down Field

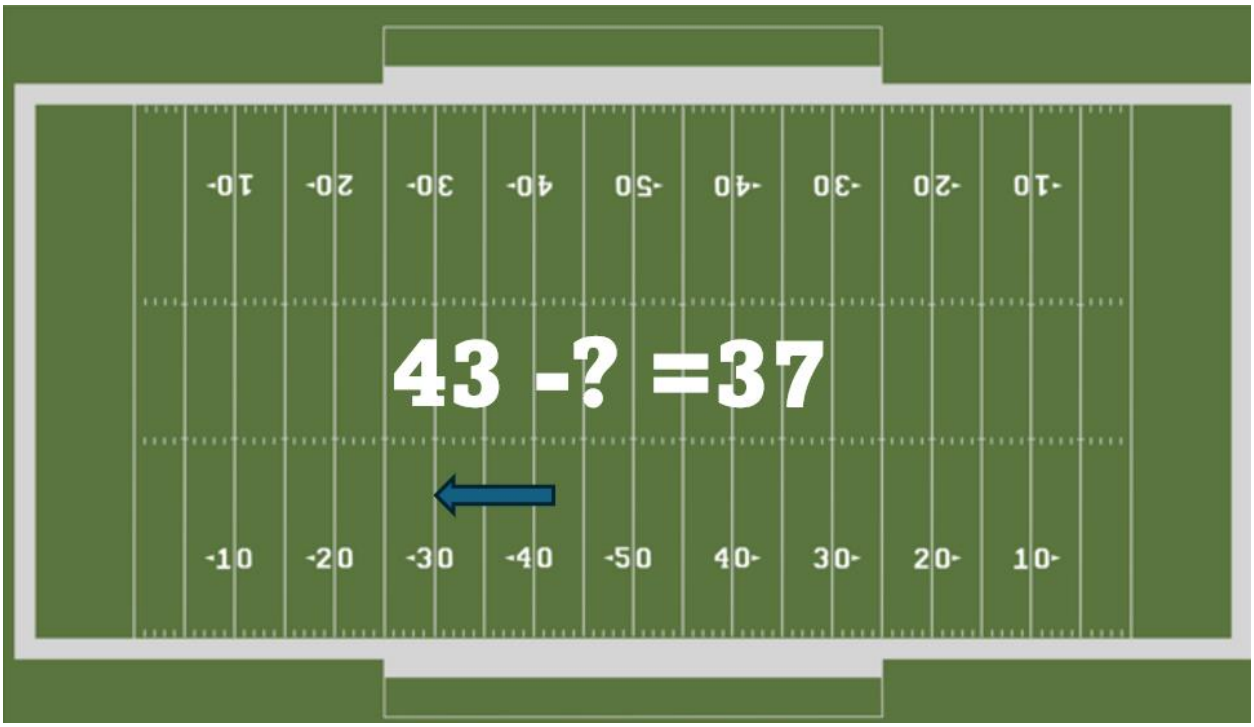


DJ caught a ball at the 30-yard line and ran an additional 10 yards. How many total yards did DJ run? Show your answer below.

Answer:

Lost Yards

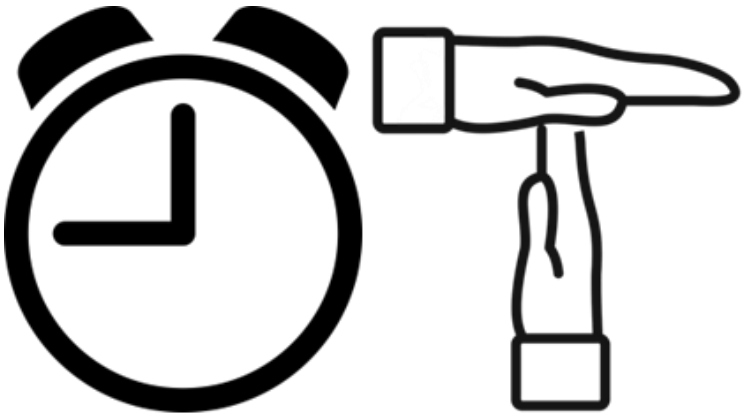
DJ caught the ball at the 43-yard line, then was tackled at the 37-yard line. How many yards did he lose? Show your answer below.



Answer:

Time Out

Each team has 3 timeouts per half in the game. DJ's team has 1 timeout remaining in the 2nd half. The opposing team has 2 timeouts remaining. How many more timeouts did DJ's team use than the opposing team?



Answer:

Multiplication and Division 

Touchdown

A touchdown (6 points) with an extra point by field goal (1 point) is worth a total of 7 points. DJ scored 3 touchdowns during the game. The field goals after each touchdown were completed successfully. How many total points were scored? Show your answer below.

Answer:

Scoreboard

DJ's s team kicked 3 field goals worth 3 points each in the first half of the game. They scored 2 touchdowns worth 7 points each in the second half. How many total points did DJ's team score?

Answer:

Trailing Behind

DJ's team is down by 21 points. How many touchdowns do they need to score to tie the game?

Answer:

Percentages 

On Target

The quarterback threw 10 passes in the championship game. He completed 8 out of 10 passes. What percentage of passes did the quarterback complete?

Answer:

In the Zone

DJ had the ball thrown to him 5 times in the championship game. He caught 4 out of 5 of the passes that were thrown to him. Of the 4 passes that DJ caught, he ran 2 of them in for a touchdown.

A: What percentage of the passes thrown to DJ did he complete?

Answer:

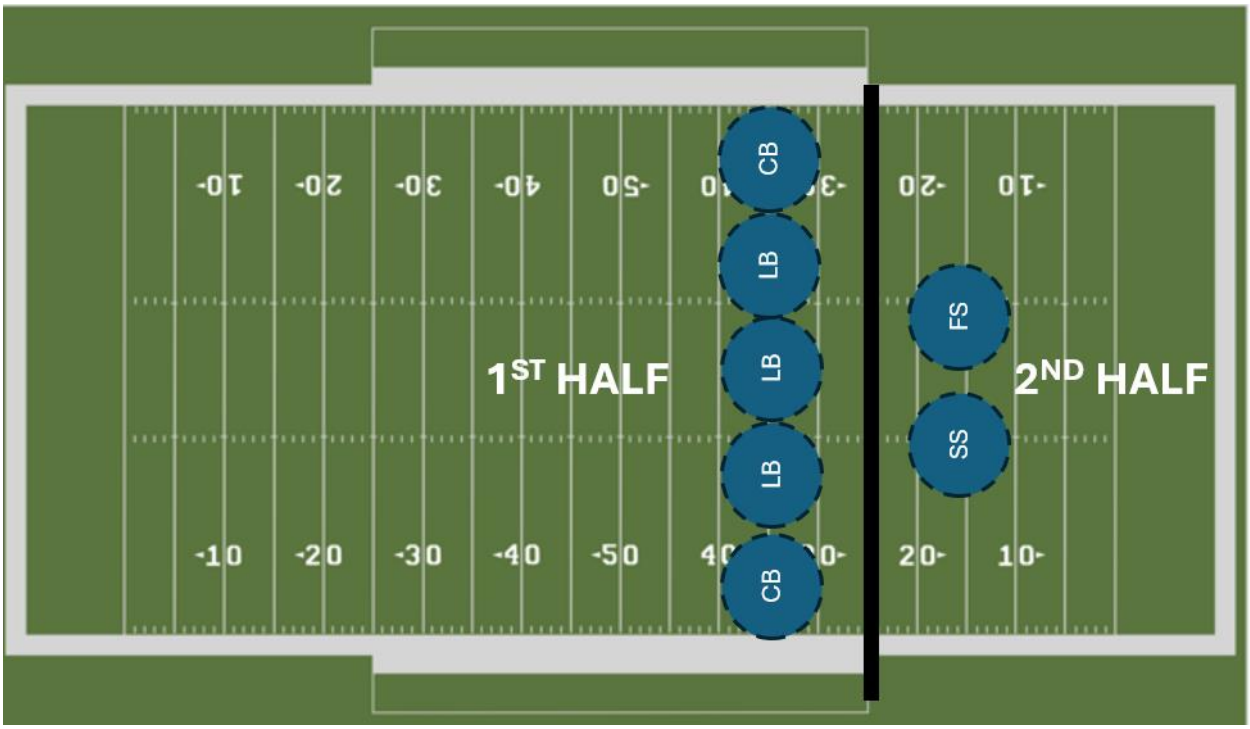
B: Of the passes that DJ completed, what percentage did he run in for a touchdown?

Answer:

Fractions: Defensive Coverages

Coverages are determined by the number of deep zone pass defenders that are positioned on the field. Read below to learn more about three common coverages and determine how they can be explained in fractions.

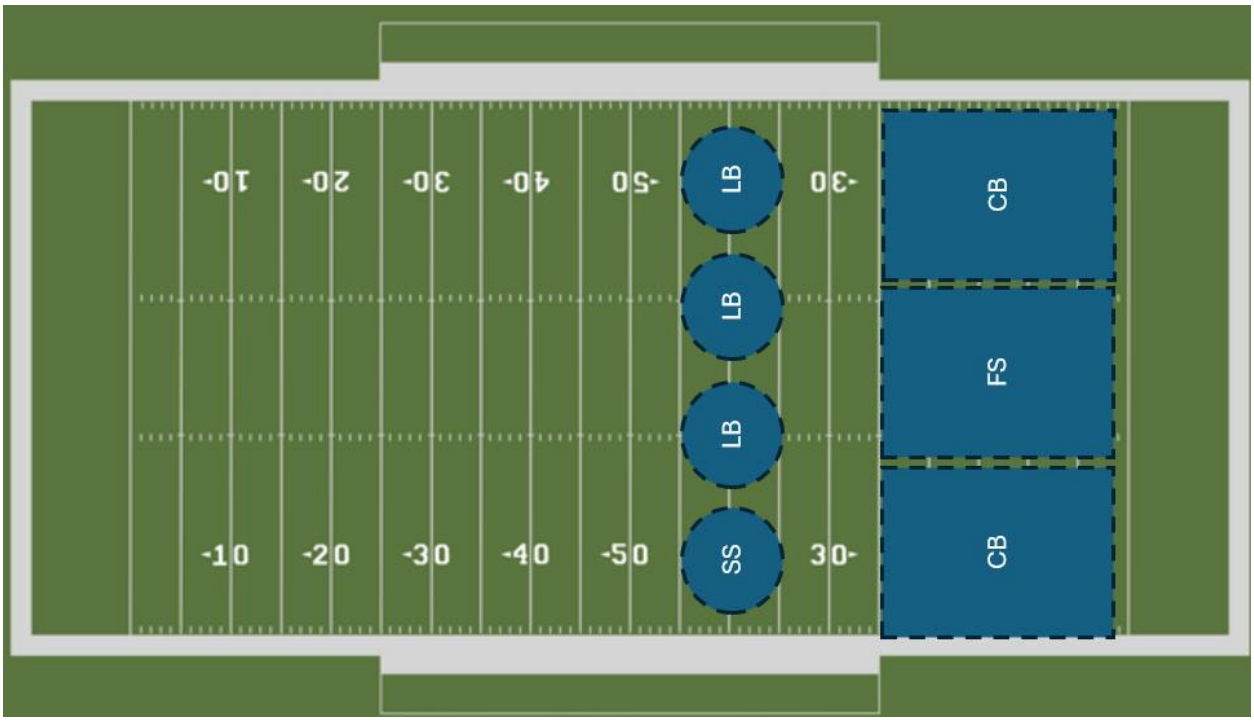
Cover 2 – the responsibility for defensive coverage is divided into 2 halves of the first. On the 1st half of the field, 5 defenders (cornerbacks and linebackers) will cover the flats. Their job is to defend short and intermediate passes. On the second half of the field, 2 safeties are responsible for defending deep balls.



Write a fraction that demonstrates cover 2:

Cover 2 Fraction: _____

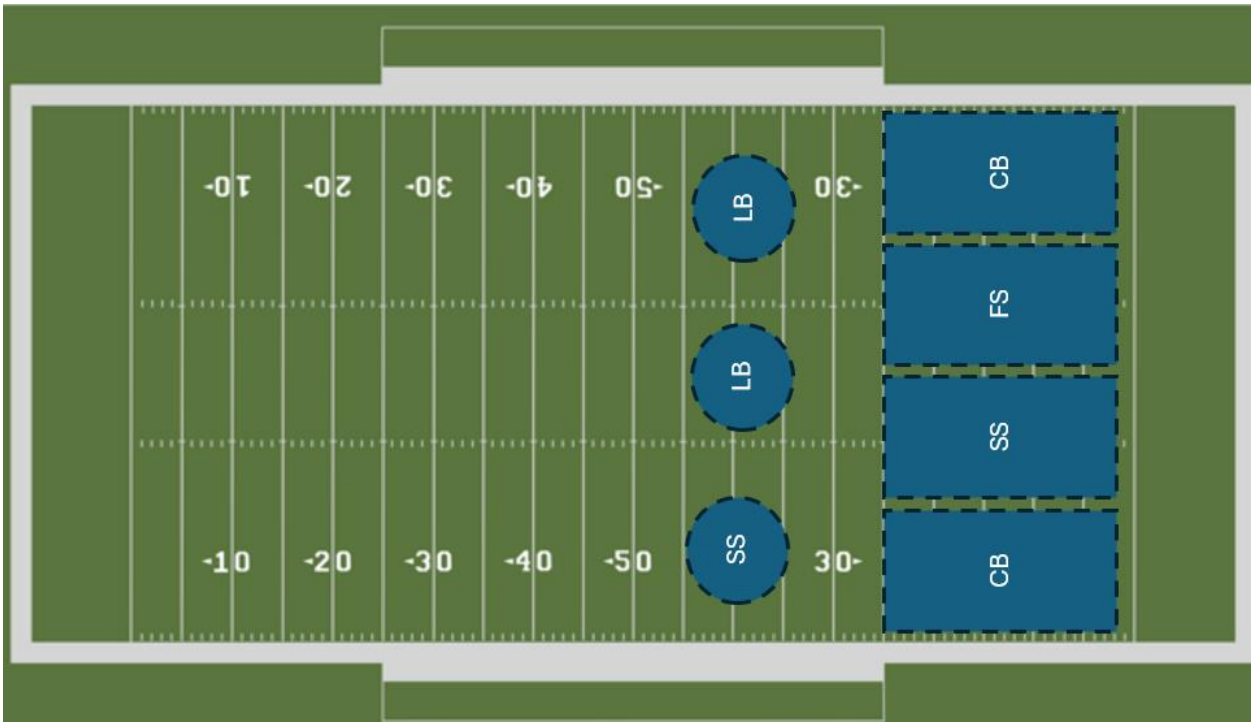
Cover 3 - 3 defensive backs (DBs) divide the responsibility for deep balls on the field into thirds. DBs are the last line of defense. If they allow an offensive player to get behind them, it can result in an easy touchdown for the offense.



Write a fraction that demonstrates cover 3:

Cover 3 Fraction: _____

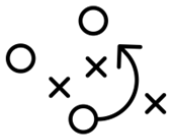
Cover 4 - 4 deep defenders divide the deep zone into fourths from sideline to sideline. Each cornerback covers deep balls closest to the sidelines. Safeties cover deep balls in the middle of the field.



Write a fraction that demonstrates cover 4:

Cover 4 Fraction: _____

Play by Play



Answer Key

Addition and Subtraction

Drive Down Field

DJ caught a ball at the 30-yard line and ran an additional 10 yards. How many total yards did DJ run?

Here's the play:

Step 1: County by 10s—10, 20, 30, 40, 50

Step 2: 30 yards + 10 yards = 40 yards

Lost Yards

DJ caught the ball at the 43-yard line, then was tackled at the 37-yard line. How many yards did he lose?

Here's the Play:

Step 1: 43-37 = 6

Timeout

Each team has 3 timeouts per half in the game. DJ's team has 1 timeout remaining in the 2nd half. The opposing team has 2 timeouts remaining. How many more timeouts did DJ's team use than the opposing team?

Here's the Play:

Step 1: 3-1 =2

Step 2: 3-2 = 1

Step 3: 2 – 1 = 1

Multiplication and Division

Touchdown

A touchdown (6 points) with an extra point by field goal (1 point) is worth a total of 7 points. DJ scored 3 touchdowns during the game. The field goals after each touchdown were completed successfully. How many total points were scored? Show your answer below.

Here's the Play:

Step 1: 7x3 = 21

Scoreboard

DJ's team kicked 3 field goals in the first half of the game. They scored 2 touchdowns in the second half. How many total points did DJ's team score?

Here's the Play:

Step 1: 3x3 = 9

Step 2: 7x2 = 14

Step 3: 9+14 = 23

Trailing Behind

DJ's team is down by 21 points. How many touchdowns do they need to score to tie the game?

Here's the play:

Step 1: 21÷7 = 3

Fractions and Percentages

On Target

The quarterback threw 10 passes in the championship game. He completed 8 out of 10 passes. What percent of passes did the quarterback complete?

Here's the Play:

Step 1: 8÷10 =.80

Step 2: .80*100 = 80%

In the Zone

DJ had the ball thrown to him 5 times in the championship game. He caught 4 out of 5 of the passes that were thrown to him. Of the 4 passes that DJ caught, he ran 2 of them in for a touchdown.

A: What percentage of the passes thrown to DJ did he complete?

Here's the Play

Step 1: 4÷5 =.90

Step 2: .90*100 = 90%

B: Of the passes that DJ completed, what percentage did he run in for a touchdown?

Here's the Play

Step 1: 2÷4 =.50

Step 2: .50*100 = 50%

Defensive Coverages

Write a faction that demonstrates COVER 2:

Here's the Play:

Step 1: The field is divided into 2 halves—cornerbacks are positioned on ½ of the field (flats) and safeties are positioned on ½ of the field (deep zone).

Step 2: ½ + ½ = 1

Write a faction that demonstrates COVER 3:

Here's the Play:

Step 1: 3 defensive backs

Step 2: Each defensive back is positioned in one of 3 sections of the field

Step 3: 1 DB out of 3 sections of the field= 1/3

Write a faction that demonstrates COVER 4:

Here's the Play:

Step 1: 4 defensive backs

Step 2: Each defensive back is positioned in one of 4 sections of the field

Step 3: 1 DB out of 4 sections of the field= 1/4