

R1)

Dana and Jamie ran for student council president at Midvale Middle School. The data below represents the voting results for grade 7.

| | 7 th grade Votes | |
|-------|-----------------------------|------|
| | Jamie | Dana |
| Boys | 24 | 40 |
| Girls | 49 | 20 |

John says that the ratio of the 7th grade boys who voted for Jamie to the 7th grade students who voted for Jamie is about 1:2. Mary disagreed. Mary says it is about 1:3.

Who is correct? Explain your answer.

Show your work.

R2)

Dana and Jamie ran for student council president at Midvale Middle School. The data below represents the voting results:

| | Jamie | Dana |
|-------|-------|------|
| Boys | 24 | 40 |
| Girls | 49 | 20 |

John said, “About one-half of the students who voted for Jamie were boys.”

Mary said “About one-third of the students who voted for Jamie were boys.”

Who is correct? Explain your answer.

Show your work.

R3)

Dana and Jamie ran for student council president at Midvale Middle School. The data below represents the voting results for the 8th grade.

| 8 th Grade Votes | | |
|-----------------------------|-------|------|
| | Jamie | Dana |
| Boys | 25 | 42 |
| Girls | 19 | 40 |

The day after the election a newspaper headline at Midvale Middle School read...

About half of the 8th grade girls voted for Jamie

Is the headline correct? Explain your answer.

R4)

Dana and Jamie ran for student council president at Midvale Middle School. The data below represents the voting results for grade 7.

| | 7 th grade Votes | |
|-------|-----------------------------|------|
| | Jamie | Dana |
| Boys | 25 | 32 |
| Girls | 49 | 16 |

Tom said, “The ratio of votes for Jamie to Dana was about 2:1.”

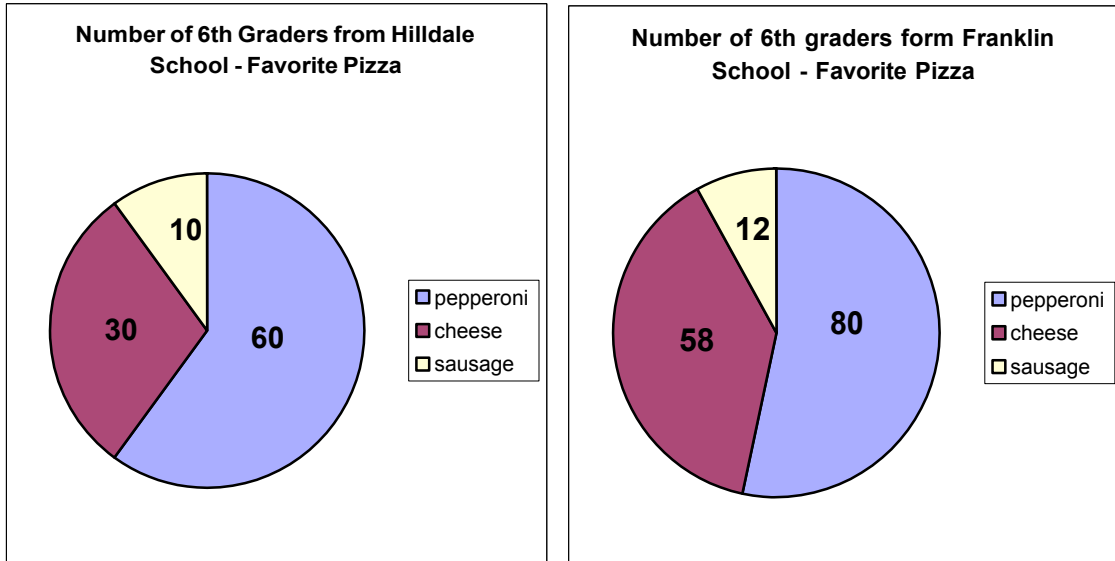
Carrie said, “The ratio of votes for Jamie to Dana was about 3:2.”

Who is correct? Explain your answer.

Show your work.

R5)

The circle graphs below show favorite pizza toppings for 6th grade students from two different schools.

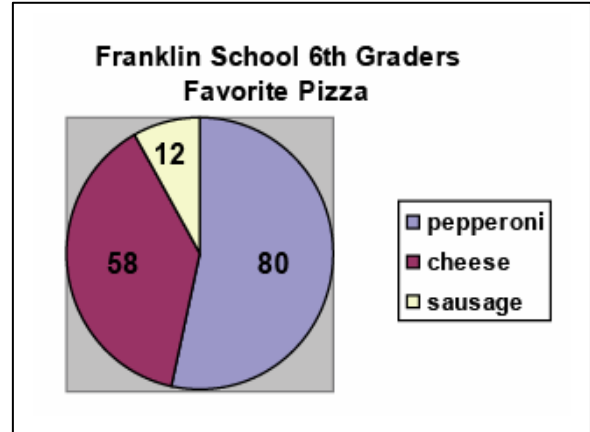
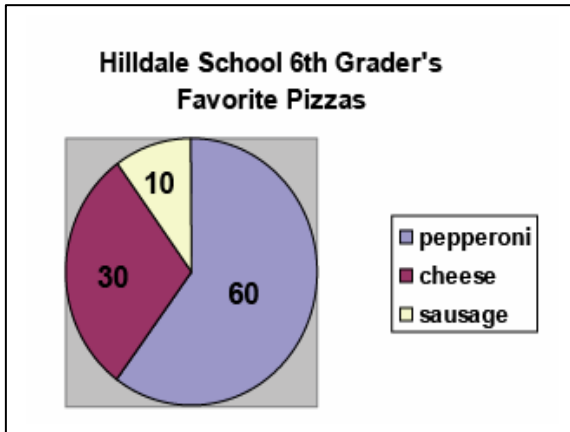


Numbers labeled in the circle graph indicate the number of students.

Judi said that the ratio of Hilldale sixth grade students who prefer cheese pizza to the Franklin School sixth grade students who prefer cheese pizza ***is about*** 1:2. Is Judi correct? Explain your answer.

R6)

The circle graphs below show favorite pizza toppings for 6th grade students from two different schools.

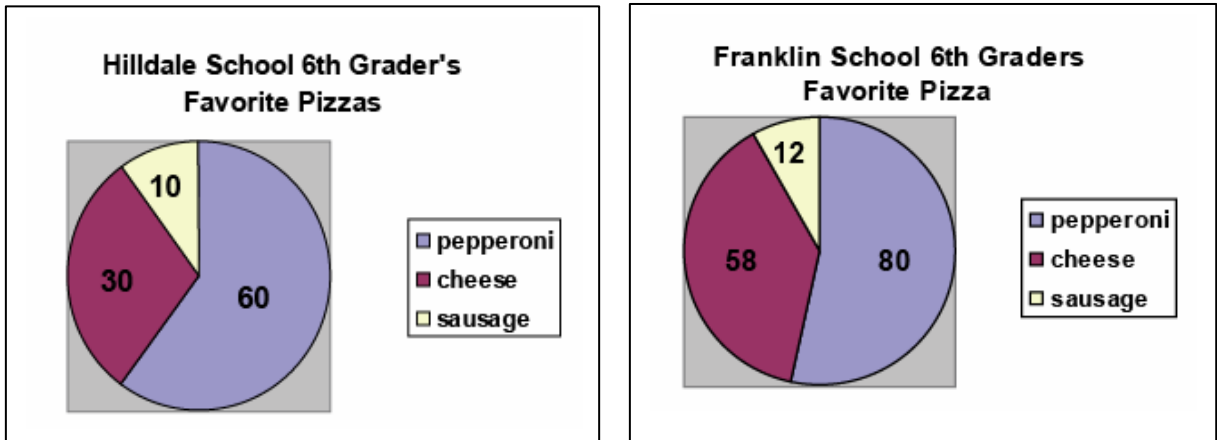


Numbers labeled in the circle graph indicate the number of students.

Which school has a greater ratio of students who like pepperoni pizza?
Explain your answer. Show your work.

R7)

The circle graphs below show favorite pizza toppings for 6th grade students from two different schools.



Numbers labeled in the circle graph indicate the number of students.

A student made the following statement about the data:

“The fraction of sixth grade students who choose pepperoni as their favorite type of pizza is greater at Franklin School than at Hilldale School.”

Is the statement correct? Why or why not?
Show your work

R8)

The ratio of males to females at a track meet is 7 to 5. There are 180 athletes at the track meet.

How many of the athletes are male? Show your work.

Ratio Problems

Student ID: _____

Date: _____

R9)

The ratio of adults to children at the East Side Fun Run is

3:4. What fraction of the Fun Run participants are children?

Show your work.

R10)

The 8th grade science class found that the ratio of cars to trucks in the school parking lot is 4:1. Which statement(s) below could correctly describe this situation?

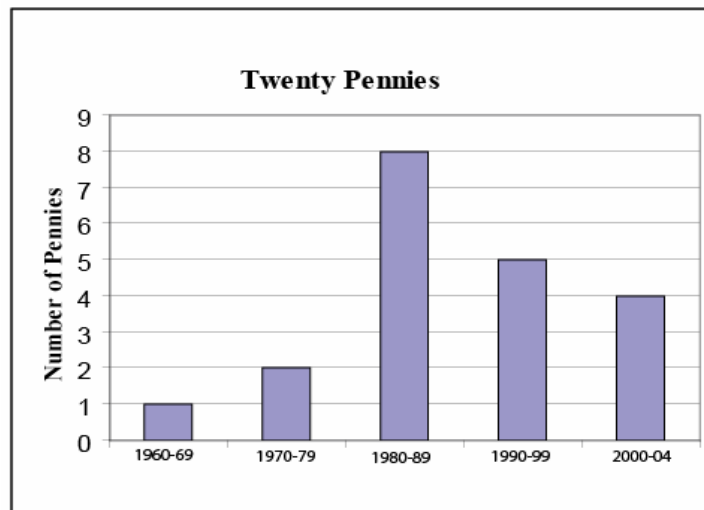
- A. The number of cars in the parking lot is 4 times the number of trucks.
- B. 1 out of 4 vehicles in the school parking lot is a truck.
- C. There are 3 more cars than trucks in the school parking lot.

Explain your choice(s).

R11)

John sorted 20 pennies into piles by the decades in which they were made. A penny was made in 1991. John sorted it into the 1990's decade.

The graph shows the data he collected.



John made the following statements.

A) The ratio of pennies made in the 2000's to pennies made in the 1980's is 1 to 2 in the pennies that John sorted. Is John correct? Explain why or why not.

B) The pennies made in the 1980s and 2000s together are about 50% of all the pennies that John sorted. Is John correct? Explain why or why not.

R12)

Marbles

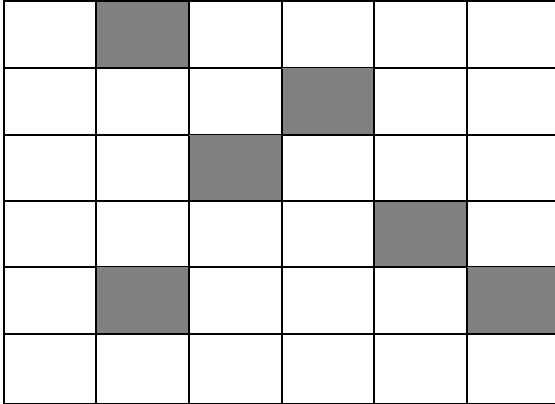
The ratio of red marbles to blue marbles in a bag is 1:2.

Sue opened the bag and found 12 red marbles.

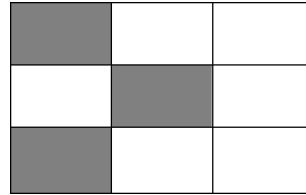
How many marbles are in the bag altogether? Show your work.

R13)

Model 1



Model 2



Is the ratio of shaded blocks to the total blocks the same in these two models?

Explain why or why not.

R14)

M & Ms

The ratio of red M&Ms to the rest of the M&Ms in a bag is 1:2. Sue opened her bag and counted all the colors except red. She counted 3 purple, 12 blue, 16 yellow and 17 green M&Ms.

How many M&Ms were in the bag? Show your work.

R15)

At Mount Harris School the ratio of students in band to the students not in band is 3 to 5.

At Lakeville School the ratio of students in band to the students not in band is 5 to 7.

In which school is being in band more popular?

Show your work.

R16)

The ratio of dogs to cats at a local pet store is 7 to 3. There are 21 dogs at the pet store.

How many cats are at the pet store?

Show your work.

R17)

The ratio of games won to games lost by the North Trenton Soccer Team was five to three. Which of the following statement(s) are true?

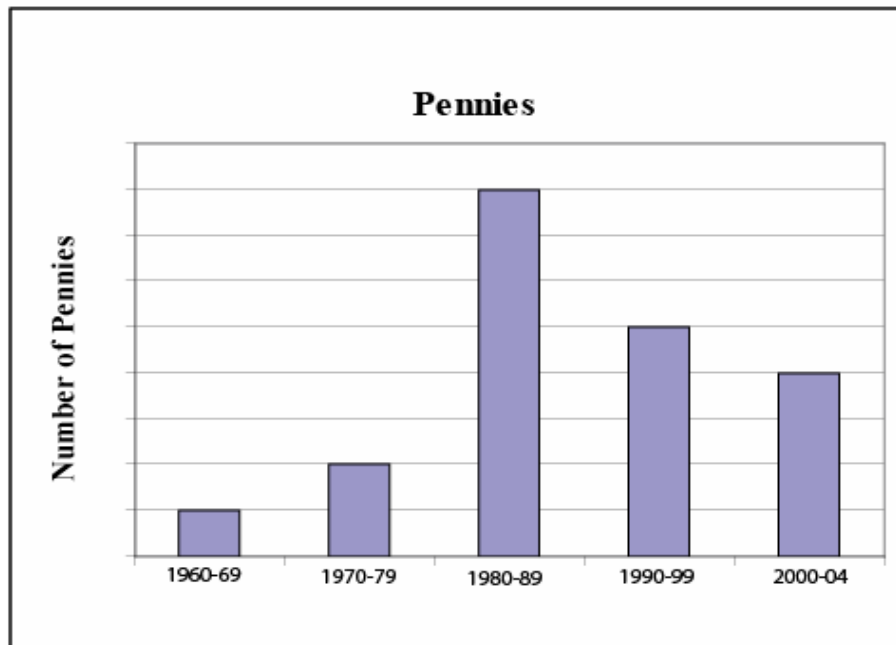
- A. North Trenton lost about 60% of their games.
- B. North Trenton won more than half of their games.
- C. North Trenton lost about 40% of their games.
- D. North Trenton lost more games than they won.

Explain your choice(s).

R18)

John sorted some pennies into piles by the decades in which they were made. The penny to the right was made in 1991. John sorted it into the 1990's decade.

The graph shows the data he collected. However, John forgot to put the scale on the side of the graph or say how many pennies he sorted.



Can each of the following be determined using John's graph?

A) The number of pennies he sorted. Explain why or why not.

B) The ratio of pennies he sorted that were made in the 1960s to the pennies he sorted that were made in the 1990s. Explain why or why not.

R19)

M & Ms

One-half of a bag of M&Ms are red.

Sue opened the bag and found 12 red M&Ms.

How many M&Ms were in the bag altogether? Show your work.

R20)

Pat and E.J.'s 6th Grade Class

| | |
|-----------------|----|
| Number of Boys | 12 |
| Number of Girls | 12 |

E.J. said that the ratio of boys to girls in the class was 12: 24 or 1: 2

Pat disagreed. Pat thought that the ratio of boys to girls was 12: 12 or 1:1

Who was correct, E.J. or Pat? Show your work.

R21)

The Hillside basketball team showed the following results for their basketball season.

| | December through January | February |
|--------|-----------------------------|----------|
| Wins | 6 | 7 |
| Losses | 16 | 9 |

Peter said, “We won about $\frac{1}{2}$ of our games this season.”

Mark said, “No, we won about $\frac{1}{3}$ of our games.”

Who is correct? Show your work.

R22)

During the soccer season Susan's team won $\frac{2}{3}$ of their games. During the basketball season Susan's team won $\frac{1}{2}$ of its games.

Is it possible that Susan's basketball team won more games than her soccer team?

Explain why or why not. Give one example.

R23)

Pat and E.J. are in a class that has 12 boys and 8 girls.

Pat said, “The ratio of the number of boys to the number of students in the class is 12:8”.

E.J. said, “I think Pat is mistaken.”

Which student is correct? Explain your reasoning.

R24)

The ratio of boys to girls in the Plymouth Marching Band is 2:3.

Shaina said, “About 70% of the marching band is made up of boys.”

Courtney said, “No, only 40% of the marching band is made up of boys.”

Who is correct? Explain your reasoning.

R25)

| | Foul Shots Made | Foul Shots Missed |
|--------|-----------------|-------------------|
| Maggie | 4 | 2 |
| Dana | 8 | 4 |

Dana and Maggie noticed that they each had the same ratio of foul shots made to foul shots missed.

Maggie said: “If we each make our next two shots, we should continue to have the same ratio of shots made to shots missed”.

Dana disagreed. Dana thought that the new ratios would be different.

Who was right, Maggie or Dana? Explain your reasoning.

R26)

A music survey of 24 students completed by Ms. Pepi's students found that 16 students preferred Hip Hop, 4 students preferred Rap, and 4 students preferred Rock.

Josh said, "Our class picked Hip Hop music over the other two choices by a 4:2 ratio."

Mike said, "I think the ratio between Hip Hop and the other two music types is a 4:6 ratio."

Who is correct? Explain your reasoning.

R27)

The ratio of the distance around your thumb to the distance around your wrist is approximately 1:3.

The distance around Caleb's thumb is 4.5 centimeters. Approximately how many centimeters would you expect the distance to be around Caleb's wrist?

Explain your thinking.

R28)

There are 40 students in the school chorus. The ratio of girls to boys in the chorus is 5 to 3.

How many girls are in the chorus?

Explain your thinking.

R29)

The ratio of flour to water in Mr. Drake's bread recipe is 3:1. In order to follow Mr. Drake's recipe, how much flour should Mr. Drake mix with 3 cups of water?

Explain your reasoning.