

Teachers and students of 6th Grade Mathematics:

Please find attached the Study Guide for the Marion County Grade 6 Mathematics Common End Of Course (CEOC) Exam.

When creating the study guide, I used the Competency Matrix (CM) for the CEOC and chose a question or two from each benchmark that should have been covered throughout the year. I pulled questions from the [Item Specifications](#) on the FLDOE website, as well as our county FCAs and example problems from the Big Ideas and Glencoe MathConnects textbooks.

For additional practice, I would recommend the “Correlation” page offered by Big Ideas Math. You can search for example problems in the book by standard. This page can be found by following this link: http://www.bigideasmath.com/protected/content/ac/fl/gr_6_assessment_benchmark_correlation.pdf

Study Guides for all middle and high school mathematics exams can be found on the Marion County Public Schools website [here](#).

Please contact me with any suggestions, questions, comments, etc.

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Grade 6 Mathematics

Common End-Of-Course Exam Study Guide

6.A.1.3 **Solve real-world problems involving multiplication and division of fractions and decimals**

1. At your birthday party, $\frac{3}{5}$ of the 20 guests were relatives. How many relatives were at your party?
2. During a period of 45 days, rain fell on $\frac{2}{3}$ of the days. On how many days did rain fall?
3. How many minutes does it take to put 45 gallons of water in the tub at a rate of $2\frac{1}{4}$ gallons per minute?

6.A.2.1 **Use reasoning about multiplication and division to solve ratio and rate problems.**

4. Amanda drove 770 miles in two days to visit a friend. On the first day, she drove 8 hours at an average speed of 55 miles per hour. She continued to drive at the same rate on the second day. How many hours did Amanda drive on the second day?
5. Four bottles of fruit juice cost \$7. How much do 11 bottles cost?
6. A great white shark swims 90 feet in 2.5 seconds. What is its speed?

6.A.2.2 **Interpret and compare ratios and rates**

7. The ratio of red marbles to blue marbles in a bag is 2:3. If there are 36 blue marbles in the bag, how many red marbles are in the bag?
8. A 12 pack of Coca-Cola costs \$4.89 at Publix. A 24 pack of Coca-Cola costs \$9.69 at Winn-Dixie. Which store offers the better buy?
9. There are 325 boys and 455 girls at Marion Middle School. Write the ratio of boys to girls in simplest form.

6.A.3.1 Write and evaluate mathematical expressions that correspond to given situations.

10. Beach World rents bicycles by the hour. They charge a one-time fee of \$5, plus \$10 per hour. If x represents the number of hours, write an expression to calculate the total charge, in dollars, to rent a bicycle for x hours.

11. Hollywood 16 charges \$4.25 for a drink and \$3.75 for a bag of popcorn. The expression below can be used to determine the total cost of d drinks and p bags of popcorn.

$$4.25d + 3.75p$$

What would be the total cost, in dollars, to purchase 4 drinks and 2 bags of popcorn?

12. Evaluate the expression when $a = 3$, $b = 5$ and $c = 10$

$$2a + 3c - 4b$$

6.A.3.2 Write, solve, and graph one- and two- step linear equations and inequalities.

For #13 & #14, solve for the given variable.

13. $3x + 2 = 20$

14. $5y - 7 \leq 13$

15. Mr. Schmidt is purchasing film for his camera. With the roll of film that is in his camera now, he can take 18 pictures. Mr. Schmidt wants to purchase several rolls of film that can each produce up to 36 pictures. The equation below can be used to determine p , the total number of pictures Mr. Schmidt can take based on r , the number of rolls of film he purchases.

$$p = 36r + 18$$

If Mr. Schmidt purchases 3 rolls of film, what is the total number of pictures he can take?

6.A.3.5 Apply the Commutative, Associative, and Distributive Properties to show that two expressions are equivalent.

16. Create an expression equivalent to $6(a - b)$ using the Distributive Property.

17. Simplify the expression $3.5 \cdot x \cdot 2$

18. Create an expression equivalent to $24 + (7 + x)$ using the Associative Property of Addition.

6.A.3.6 **Construct and analyze tables, graphs, and equations to describe linear functions and other simple relations verbally and algebraically.**

19. A cellular phone company charges a fixed monthly fee, plus \$0.25 for each minute the phone is in use. The table below shows that T , the total charge for one month, depends on m , the number of minutes the phone is in use.

**CELLULAR CHARGES
FOR ONE MONTH**

Minutes (m)	Total Charges (T)
20	\$17.50
30	\$20.00
40	\$22.50
50	\$25.00
60	\$27.50

Which equation correctly shows the relationship between T and m ?

- A. $T = 0.25m + 17.50$
 - B. $T = m + 17.30$
 - C. $T = 0.25m + 12.50$
 - D. $T = m - 2.50$
-

6.A.5.1 **Use equivalent forms of fractions, decimals, and percents to solve problems.**

20. Mrs. Nelson has 20 students in her classroom. She noticed that $\frac{3}{10}$ of the students have blue eyes

and $\frac{1}{2}$ of the students have brown eyes. The rest of the students have green eyes. What percent of the students in Mrs. Nelson's class have green eyes?

21. A school held an election for student body president. When the election was over, the principal announced some facts about the election, as shown below.

- A total of 800 votes were cast for president
- 20% of the votes for president were for Brian
- $\frac{3}{8}$ of the votes for president were for Paulette

The remaining votes for president were for Shirley. What was the total number of votes for Shirley?

6.A.5.2 **Compare and order fractions, decimals, and percents with and without a number line.**

22. Place the following numbers in order from **least** to **greatest**: $\frac{1}{3}$, **0.3**, **35%**, $\frac{1}{4}$

23. Which of the following numbers would be nearest zero on the number line?

- A. 0.5 B. 0.085 C. $\frac{1}{3}$ D. $\frac{9}{100}$

6.A.5.3 **Estimate the results of computations with fractions, decimals, and percents, and judge the reasonableness of the results.**

24. Mr. Madsen worked 49 hours last week at his job. He spent $\frac{1}{5}$ of this time in meetings and $\frac{1}{3}$ of this time talking to customers on the phone. Which method would provide the most reasonable estimate of the total number of hours Mr. Madsen spent in meetings and talking to customers on the phone at his job last week?

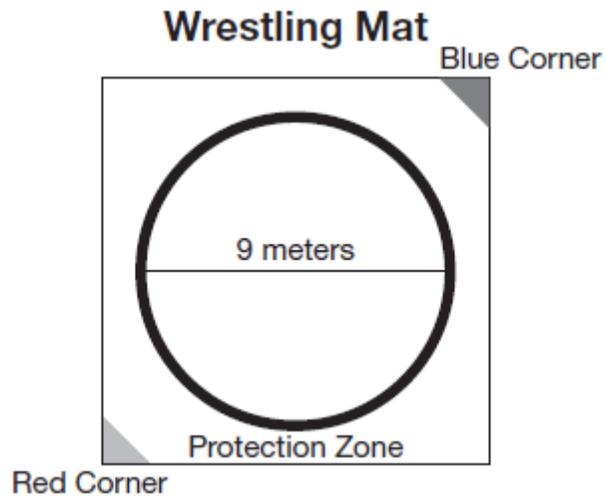
- A. multiply $\frac{1}{4}$ by 50 C. multiply $\frac{1}{5}$ by 50 and add $\frac{1}{3}$ to the product
- B. multiply $\frac{1}{2}$ by 50 D. multiply $\frac{1}{5}$ by $\frac{1}{3}$ and multiply the product by 50

Estimate by rounding each factor to the nearest whole number.

25. $7.28 \times 5 =$
26. $9.89 \times 8 =$

6.G.4.1 Understand the concept of π , know common estimates of π (3.14; $\frac{22}{7}$) and use these values to estimate and calculate the circumference and the area of circles.

27. In a regulation wrestling match, wrestlers compete within a circular zone 9 meters in diameter.



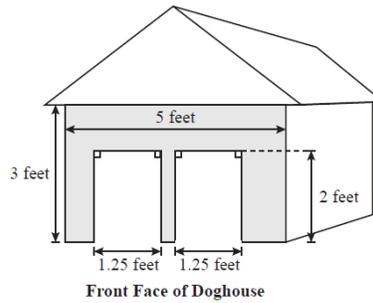
Which of the following is closest to the area of the circular zone?

- A. 28.3 square meters
- B. 56.5 square meters
- C. 63.6 square meters
- D. 254.3 square meters

28. Find the circumference of a circle with a radius of 12 centimeters.

6.G.4.2 Find the perimeters and areas of composite two-dimensional figures, including non-rectangular figures (such as semicircles).

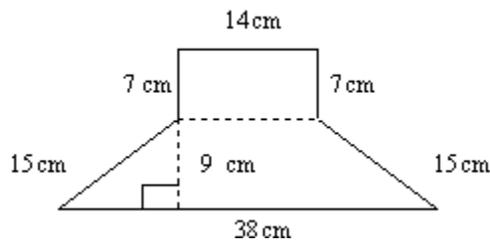
29. Dana plans to paint the front face of her doghouse, as shown by the shaded region below. The face is rectangular in shape, with 2 congruent rectangular doorways cut out.



Dana needs to calculate the area of the shaded region to be painted so she can purchase the correct amount of paint. What is the area of the shaded region of her doghouse that needs to be painted?

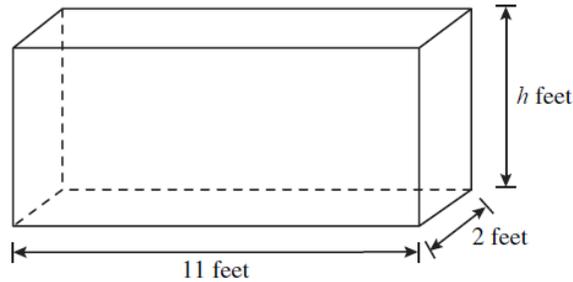
- A. 5 square feet
- B. 10 square feet
- C. 10.5 square feet
- D. 12.5 square feet

30. Find the area



6.G.4.3 Determine a missing dimension of a plane figure or prism given its area or volume and some of the dimensions, or determine the area or volume given the dimensions.

31. Lamar is building a glass case for a reptile display. The interior of the case is in the shape of a rectangular prism with the dimensions shown in the diagram.



The total volume of the interior of the case is 154 cubic feet. What is the value of h ?

6.S.6.1 Determine the measures of central tendency (mean, median, mode) and variability (range) for a given set of data.

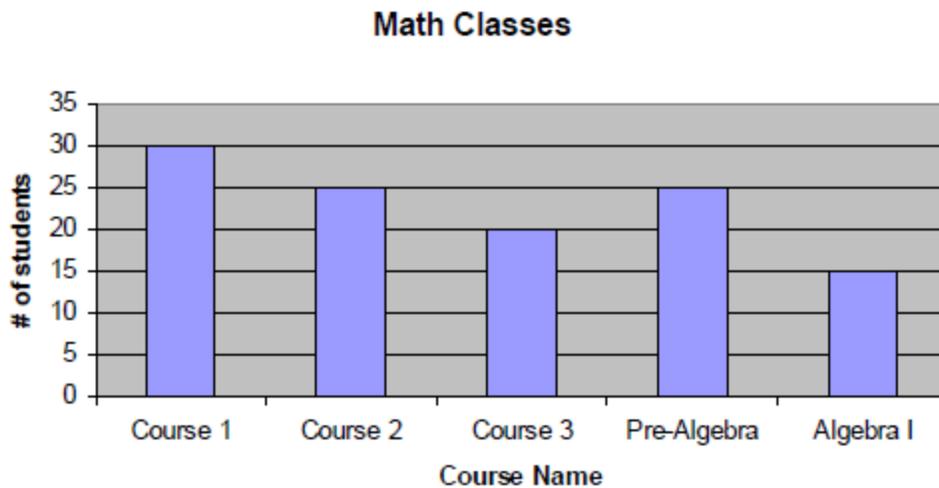
32. In a section of the Ocala National Forest, the rangers measured the height of several trees. The heights were as follows: 78 feet, 65 feet, 83 feet, 85 feet, 92 feet, 84 feet.

What is the mean of the tree heights?

What is the median of the tree heights?

What is the range of the tree heights?

33. Find the mean, median and mode for the data displayed on the graph below.



6.S.6.2 **Select and analyze the measures of central tendency or variability to represent, describe, analyze, and/or summarize a data set.**

34. Noreen took 5 tests in her science class. Her test scores are shown in the table below.

NOREEN'S TEST SCORES

Chapter in Science Book	Test Score
1	70
2	90
3	80
4	50
5	70

Noreen's teacher calculated the mean, median, mode, and range of Noreen's set of test scores. Which of these measures has the highest value?

- A.** mean
- B.** median
- C.** mode
- D.** range