

Student Name:



# MASTERY VIEW

# Predictive Assessments

## 2022-2023

## Grade 7 Math

## Assessment 2

### Cabarrus County School District

### North Carolina

Fall 2022



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## **CALCULATOR INACTIVE**

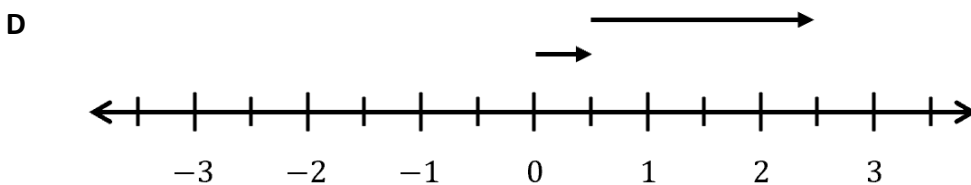
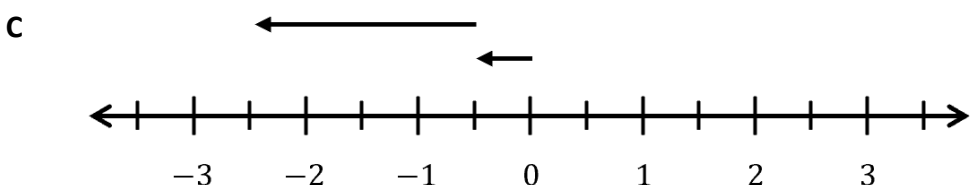
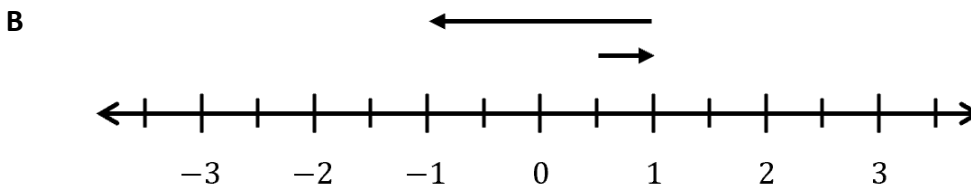
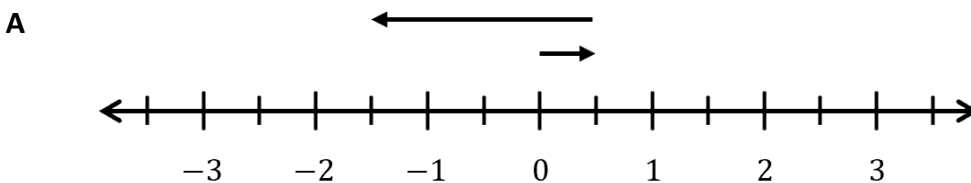
**The items in this test are based on the North Carolina Standard Course of Study for Mathematics.**

### **DIRECTIONS FOR THE CALCULATOR INACTIVE SECTION OF THE TEST:**

- Calculators may not be used during this test.
- Read each problem carefully.
- Choose the best answer from the choices given.
- Diagrams used in the test may not be drawn to scale.
- Stop when you see the words "STOP. END OF CALCULATOR INACTIVE SECTION."
- When you have completed the calculator inactive questions, read and follow the directions at the end of this section of the test.



1. Which number line models the sum of  $0.5 + (-2)$  correctly?



2. Which term describes  $-\frac{1}{3}$ ?

- A integer
- B positive number
- C rational number
- D whole number



3. A teacher writes the expression  $28.2 + 17.5(41.25 \div -5)$  on the board. The table shows how one student simplifies the expression.

Step	Work
Given	$28.2 + 17.5(41.25 \div -5)$
1	$28.2 + 17.5(-8.25)$
2	$45.7(-8.25)$
3	$-377.025$

Which statement is true?

- A The student makes a mistake between the Given and Step 1.
- B The student makes a mistake between Step 1 and Step 2.
- C The student makes a mistake between Step 2 and Step 3.
- D The student simplifies the expression correctly.
4. Which situation results in a solution of 0?
- A On Friday morning, a student earns \$35 mowing lawns. On Friday night, the student spends the \$35 while out with friends. How much of the money that the student earns from mowing lawns is left?
- B A vacationer goes scuba diving and is at a depth of  $-30$  yards during the dive. Later in the day, the vacationer hikes up to a lookout 30 yards above the ocean. What is the vertical distance between the diving position and the lookout position?
- C A student walks 5 blocks west to school then another 10 blocks west after school. How far is the student from the starting location?
- D A student owes a friend \$7.50. If the student borrows \$7.50 from another friend, how much does the student owe in total?
5. The temperature outside at dawn is  $23^{\circ}\text{F}$ , and the temperature decreases by  $28^{\circ}\text{F}$  over the course of the day. If the temperature decreases by another  $9^{\circ}\text{F}$  by dawn the next morning, which statement is true?
- A The temperature at dawn the next morning is  $-14^{\circ}\text{F}$ .
- B The temperature at dawn the next morning is  $-4^{\circ}\text{F}$ .
- C The temperature at dawn the next morning is  $4^{\circ}\text{F}$ .
- D The temperature at dawn the next morning is  $14^{\circ}\text{F}$ .



6. What is the value of  $-4 - 2 + \frac{1}{2}\left(12 \div \frac{1}{4}\right)$ ?

- A 30
- B 18
- C -4.5
- D -264

**DIRECTIONS FOR THE CALCULATOR INACTIVE, GRIDDED RESPONSE SECTION OF THE TEST:**

- Questions 7 through 9 require you to write your answers in the boxes provided on the back of your answer document.
- Write only the number or symbol in each box, and fill in the circle in each column that matches what you have printed.
- Fill in only 1 circle in each column.

7. What is the value of  $17 \cdot -21$ ?

8. What is the value of  $\frac{1}{4} + \left(-8\frac{1}{2}\right) + \frac{1}{4}$ ?

9. What is the decimal equivalent of  $-\frac{5}{8}$ ?



## END OF CALCULATOR INACTIVE SECTION

### DIRECTIONS:

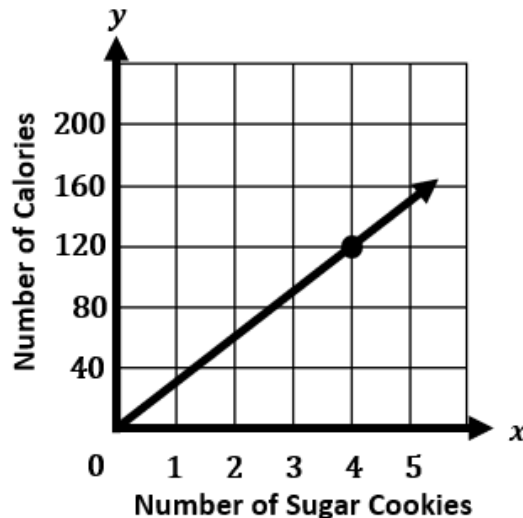
- Look back over your answers for the calculator inactive questions. You will *not* be able to go back and work on these questions once you are given a calculator.
- Raise your hand to let your teacher know you are ready to begin the calculator active questions.
- Do not begin work on the calculator active test questions until your teacher has given you a calculator.
- Keep your answer document on the gridded response side.
- When your teacher has given you a calculator, GO TO THE NEXT PAGE, and BEGIN the calculator active questions.
- Stop when you see the words "STOP. END OF MATH TEST."



**DIRECTIONS FOR THE CALCULATOR ACTIVE, GRIDDED RESPONSE SECTION OF THE TEST:**

- Questions 10 through 12 require you to write your answers in the boxes provided on the back of your answer document.
- Write only the number or symbol in each box, and fill in the circle in each column that matches what you have printed.
- Fill in only 1 circle in each column.

10. The graph shows the number of calories,  $y$ , in  $x$  sugar cookies from a local bakery.



What is the constant of proportionality for the number of calories in 1 sugar cookie?





11. A costume closet contains 8 dresses, 3 shirts, 5 pairs of pants, and 4 hats. What is the probability of randomly selecting a hat from the costume closet?

12. The table shows the proportional relationship between  $y$  and  $x$ .

$x$	$y$
12	48
15	60
20	80

If the equation  $y = kx$  represents the relationship, what is the value of  $k$ ?

## END OF GRIDDED RESPONSE SECTION

### DIRECTIONS:

- Look back over your answers for the calculator active gridded response questions.
- Turn your answer document over to the multiple choice side.
- Then, **GO TO THE NEXT PAGE**, and **BEGIN** the calculator active, multiple choice questions.
- Stop when you see the words **"STOP. END OF MATH TEST."**



13. A teacher numbers 40 slips of paper 1 through 40. If a student randomly selects a slip of paper, what is the probability that the student selects a slip of paper with the number 32?
- A  $\frac{1}{40}$
- B  $\frac{3}{40}$
- C  $\frac{1}{5}$
- D  $\frac{4}{5}$
14. If there is a  $\frac{1}{65}$  chance of a game piece landing on a blue square during a game, which *best* describes the probability of the game piece landing on a blue square?
- A certain
- B impossible
- C likely
- D unlikely
15. A student rolls a fair 1 – 6 number cube. What is the probability that the student rolls a 1?
- A  $\frac{1}{6}$
- B  $\frac{1}{3}$
- C  $\frac{2}{3}$
- D  $\frac{5}{6}$
16. A fair 1 – 6 number cube is rolled 1, 500 times. Which statement is true?
- A The number cube will land on 3 exactly 400 times.
- B The number cube will land on 3 exactly 250 times.
- C The number cube should land on 3 approximately 400 times.
- D The number cube should land on 3 approximately 250 times.



17. The temperature at dawn was  $-3^{\circ}$  Fahrenheit. The temperature at noon is  $15^{\circ}$  Fahrenheit.

Which statement is true?

- A The temperature decreased  $12^{\circ}$  Fahrenheit from dawn to noon.
- B The temperature decreased  $18^{\circ}$  Fahrenheit from dawn to noon.
- C The temperature increased  $12^{\circ}$  Fahrenheit from dawn to noon.
- D The temperature increased  $18^{\circ}$  Fahrenheit from dawn to noon.

18. A family takes a road trip, and it takes  $\frac{1}{3}$  tank of gas to travel  $\frac{1}{4}$  of the total distance. At this rate, what fraction of the total trip distance can the family travel using 1 tank of gas?

- A  $\frac{1}{12}$
- B  $\frac{3}{4}$
- C  $\frac{11}{12}$
- D  $\frac{4}{3}$

19. A group of children dig a hole in the sand to make a moat around a sandcastle. The children start digging at an elevation of  $-0.5$  feet. The children dig deeper into the sand so that the elevation of the bottom of the moat changes at a rate of  $-1.5$  feet per hour for 3 hours, they take a break, and then they dig at a rate of  $-2$  feet per hour for 1 hour before completing the moat.

What is the final elevation of the bottom of the moat?

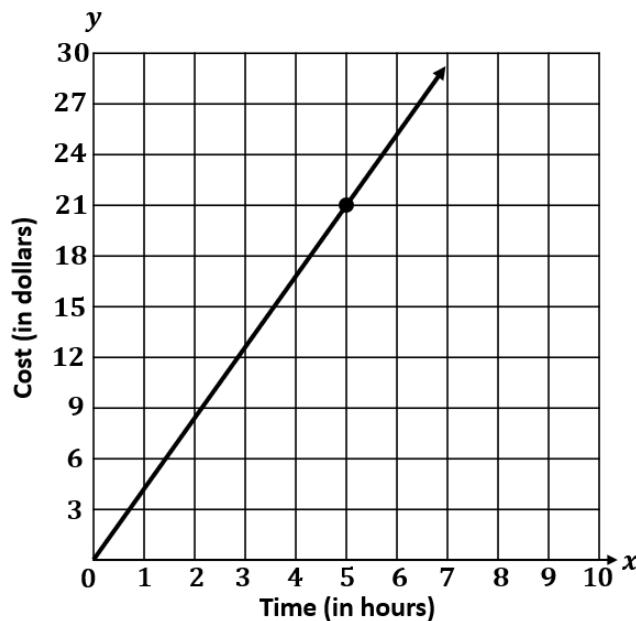
- A  $-16$  feet
- B  $-15.5$  feet
- C  $-7$  feet
- D  $-6.5$  feet



20. Which scenario *could* represent the expression  $2\frac{3}{8} \div \frac{1}{4}$ ?

- A A biker lives  $2\frac{3}{8}$  miles from her friend's house. If she has already traveled  $\frac{1}{4}$  mile, how many miles does she have left to travel?
- B A biker travels  $2\frac{3}{8}$  miles. She will take a break every  $\frac{1}{4}$  of a mile. How many breaks will the biker take?
- C A chef buys  $2\frac{3}{8}$  pounds of crabmeat. If he needs  $\frac{1}{4}$  pound more to make a crab dip recipe, how many pounds of crabmeat does the crab dip recipe require?
- D A chef buys  $2\frac{3}{8}$  pounds of crabmeat. If he uses  $\frac{1}{4}$  pound to make 1 crab cake, how many pounds of crabmeat remain?

21. Consider the graph, which shows the relationship between the cost,  $y$ , for renting a bicycle for  $x$  hours.



What does the point (1, 4.2) represent?

- A The cost to rent a bicycle is \$1.00 every  $4\frac{1}{5}$  hours.
- B The cost to rent a bicycle is \$4.20 every 1 hour.
- C The cost to rent a bicycle is \$5.00 every 21 hours.
- D The cost to rent a bicycle is \$21.00 every 5 hours.



22. The table shows the probabilities of various colored marbles being selected out of a bin.

Color	Probability
blue	0.3
green	0.4
orange	0.1
yellow	0.2

Which orders the marble colors from *least likely* to *most likely* to be selected out of the bin?

- A orange, yellow, blue, green
- B orange, blue, yellow, green
- C green, yellow, blue, orange
- D green, blue, yellow, orange
23. Which statement is true?
- A The number  $\frac{18}{23}$  is not rational because the decimal expansion does not repeat or terminate.
- B The number  $\frac{18}{23}$  is not rational because the decimal expansion eventually repeats or terminates.
- C The number  $\frac{18}{23}$  is rational because the decimal expansion does not repeat or terminate.
- D The number  $\frac{18}{23}$  is rational because the decimal expansion eventually repeats or terminates.
24. A student creates a scale model of a dinosaur in science class. In the model, the length of the dinosaur's tail is 2 inches. The actual length of the dinosaur's tail is 5 feet.

Which scale does the student use to create the scale drawing of the dinosaur?

- A 1 inch represents 0.4 foot.
- B 1 inch represents 2.5 feet.
- C 2.5 inches represent 0.4 foot.
- D 2.5 inches represent 1 foot.



25. The frequency table shows how often a random sample of customers select various ice cream flavors at an ice cream store.

Ice Cream Flavor	Chocolate	Cookie Dough	Mint Chip	Vanilla
Frequency	12	18	9	6

If there are a total of 350 customers who order ice cream from the store one day, what is the *best approximation* for how many customers that day select Cookie Dough?

- A 18 customers
  - B 20 customers
  - C 140 customers
  - D 230 customers
26. A student spins a spinner labeled with six different animals 25 times. The frequency table shows the results.

Animal	Frequency
cow	6
elephant	2
frog	5
kangaroo	5
llama	4
panda	3

Based on the data in the table, what is the probability that the next spin will land on a llama or a panda?

- A 0.28
- B 0.16
- C 0.12
- D 0.04



27. Which statement about  $\frac{-3}{15}$  is true?

- A  $\frac{-3}{15}$  is a rational number because the fraction is negative, and all negative numbers are rational numbers.
- B  $\frac{-3}{15}$  is a rational number because the quotient of two non-zero integers is always a rational number.
- C  $\frac{-3}{15}$  is not a rational number because the fraction is negative, and negative numbers are never rational numbers.
- D  $\frac{-3}{15}$  is not a rational number because the quotient of two non-zero integers is never a rational number.

28. Which event *most likely* has a probability of  $\frac{1}{2}$ ?

- A picking a king out of a deck of 52 playing cards with 4 kings
- B picking a spade out of a deck of 52 playing cards with 13 spades
- C rolling an even number on a fair 1 – 6 number cube
- D spinning a 1 on a spinner divided into 4 equal-sized sections numbered 1 to 4

29. A spinner divided into 3 equal-sized sections labeled 1 – 3 is spun 30 times and lands on the section labeled 2 a total of 12 times. What is the *approximate* difference between the value of the experimental and theoretical probability of the spinner landing on the section labeled 2?

- A 0.05
- B 0.07
- C 0.5
- D 0.7



30. A student has two options to purchase a laptop.

- **Option 1: Pay \$540 plus 15% sales tax now.**
- **Option 2: Pay exactly \$120 now and then \$58 each month for 9 months.**

What is the *approximate* percent increase in how much the student pays with Option 2 versus Option 1?

- A 3.4%
- B 15.9%
- C 22.2%
- D 86.9%



