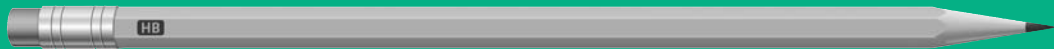


Colorado Measures of Academic Success



Grade 8 Mathematics



Paper Practice Resource for Students

Paper Practice Resource for Students

The Colorado Measures of Academic Success (CMAS) is Colorado’s standards-based assessment program designed to measure the Colorado Academic Standards (CAS) in the content areas of science, social studies, English language arts, and mathematics. The sample items included in this resource provide students with an opportunity to become familiar with the format of test items that appear in the paper-based test books.

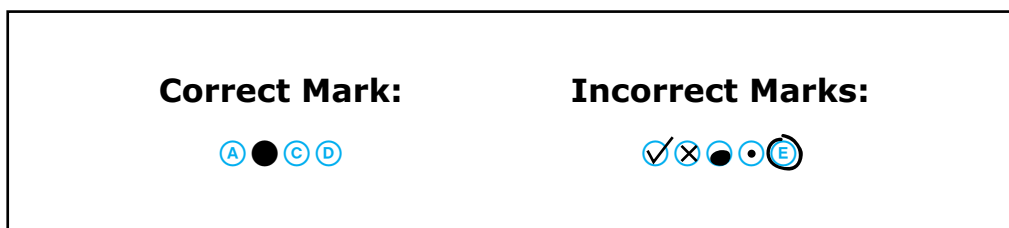
While the use of the sample items is not required, it is strongly encouraged to help ensure students are familiar with the types of items they may encounter while taking the paper-based test.

The sample item sets in the CMAS Practice Resources are not intended to be representative of a complete unit or test, nor are they intended to cover all assessed content or item types. To view assessment frameworks, high level blueprints, scoring rubrics, evidence statements and standards for the CMAS assessments, visit: https://www.cde.state.co.us/assessment/cmas_testdesign.

Item Types:

Selected Response Items

Selected response items are multiple choice questions. To respond, the student indicates their response in an answer grid or by filling in the circle(s) next to their answer choice.



Constructed Response Items

Constructed response items are questions or prompts that require an independent, written response. To respond, the student writes his or her answer in the response box in the test book.

Converted Online Technology-Enhanced Item Types

Online technology-enhanced items converted to the paper testing format may ask students to:

- Circle the correct answer
- Complete a table with checkmarks, Xs, or letters from a list of answer choices
- Fill in the blank
- Draw lines from boxes to correct answers
- Complete a bar graph or histogram
- Interact with a number line
- Graph points and lines on a coordinate grid
- Divide and shade shapes to indicate fractions

Directions for Completing the Answer Grids

1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.
5. Do not fill in a circle under an unused box.
6. Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.
7. See below for examples on how to correctly complete an answer grid.

EXAMPLES

To answer -3 in a question, fill in the answer grid as shown below.

-	3				
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
<input checked="" type="radio"/>	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

To answer $.75$ in a question, fill in the answer grid as shown below.

	.	7	5		
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	<input checked="" type="radio"/>	5	5	5
6	6	6	6	6	6
7	<input checked="" type="radio"/>	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

OR

	0	.	7	5	
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0	<input checked="" type="radio"/>	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	<input checked="" type="radio"/>	5	5
6	6	6	6	6	6
7	7	<input checked="" type="radio"/>	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

ITEM SET 1 - SECTION 1 (Non-Calculator)

Directions:

This Item Set has two sections: a non-calculator section and a calculator section. You will now take the non-calculator section. You may not use a calculator.

1. Which decimal is equivalent to $\frac{11}{15}$?

(A) $0.\overline{733}$

(B) 0.73

(C) $0.7\overline{3}$

(D) 0.733

2. Which expression is equivalent to $4^5 \times 4^{-3}$?

(A) 4^8

(B) 4^2

(C) 4^{-2}

(D) 4^{-8}

3. The table shows a function composed of the given input and output values.

Function

Input	Output
2	1
3	3
4.5	6
?	?

Which sets of values could be included in the function?

Select **all** possible sets of values.

(A)

Input	Output
1	2

(B)

Input	Output
2	3

(C)

Input	Output
3	2

(D)

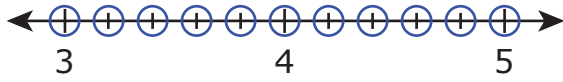
Input	Output
-3	3

(E)

Input	Output
-4.5	6

4. Select a point on the number line that **best** approximates the location of $\sqrt{10}$.

Fill in **one** circle on the number line to plot the point.



This is the end of Item Set 1 Section 1.

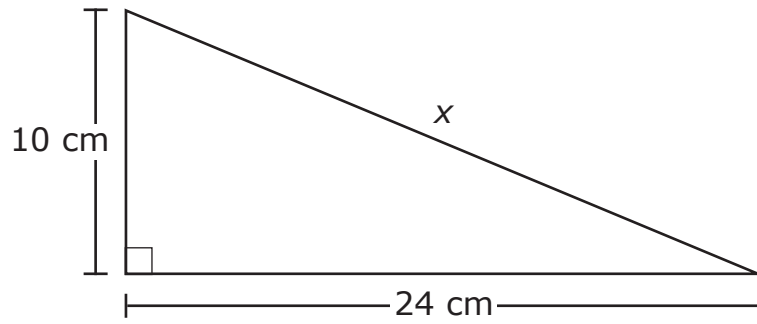


ITEM SET 1 - SECTION 2 (Calculator)

You may use a calculator for Item Set 1 - Section 2.



5. A right triangle is shown.



What is the value of x , in centimeters?

- (A) 17
- (B) 22
- (C) 26
- (D) 34



6. Two companies rent boats by the hour. The total cost, in dollars, c , depends on the number of hours, h . The equations that represent the rental rates of both companies are shown.

$$\text{Company A: } c = 15h + 20$$

$$\text{Company B: } c = 20h$$

- A person rents a boat from Company A for h hours and realizes they would have paid the same amount if they had rented the boat from Company B. How many hours, h , did the person rent the boat? Explain or show each step of your work.
- Verify that your solution for h hours of renting the boat is the same cost, c , for each company.

Enter your answer and your explanations or steps in the space provided.



7. Two linear functions are described.

Function Q

$$y = 2x + 7$$

Function R

x	0	1
y	0	6

Which statement is true about the rate of change of Function Q?

- (A) It is 3 times the rate of change of Function R.
- (B) It is 2 times the rate of change of Function R.
- (C) It is $\frac{1}{2}$ the rate of change of Function R.
- (D) It is $\frac{1}{3}$ the rate of change of Function R.



8. Two snails climbed up a tree at a constant rate. A person measured and recorded their respective distances above the ground.

- Snail A was 12.5 inches above the ground at 10 minutes and 16 inches above the ground at 24 minutes.
- Snail B started at 3 inches above the ground and climbed 0.3 inch per minute.

The snails continued at the same speeds.

- Determine the amount of time, in minutes, it took for the two snails to be the same distance above the ground.
- Include an equation to represent each snail's distance above the ground, y , in terms of x , the minutes elapsed since the measurement started. Show your work or explain your answer.

Enter your answer, your equation, and your work or explanation in the space provided.

This is the end of Item Set 1 Section 2.

