Student Name _____

P

MCAP Maryland Comprehensive Assessment Program

Algebra I/II

Test Booklet

Practice Test

TEST BOOKLET SECURITY BARCODE

Unit 1
(Non-Calculator)

Directions:

Today, you will take Unit 1 of the Algebra I/II Practice Test. You will not be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your answer document. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses written within the provided space will be scored.

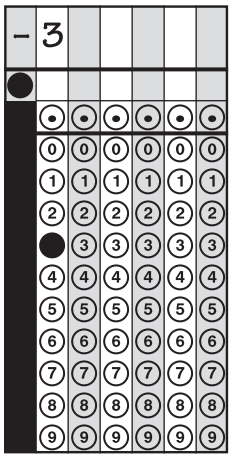
If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this unit ONLY. Do not go past the stop sign.

Directions for Completing the Answer Grids

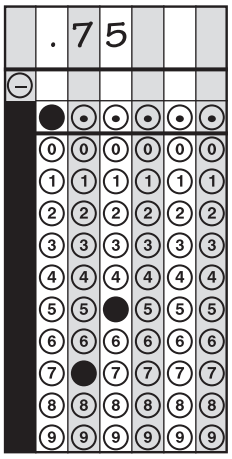
1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each box, fill in the circle that matches the number or symbol you wrote above. Make a solid 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.



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



1 Samantha has $35 in her savings account. At the end of each week, she will add $20 to the account.

Which equation describes the total amount S, in dollars, that Samantha will have in her account at the end of week w?

Select one answer.

A $S = 15w$

B $S = 55w$

C $S = 20 + 35w$

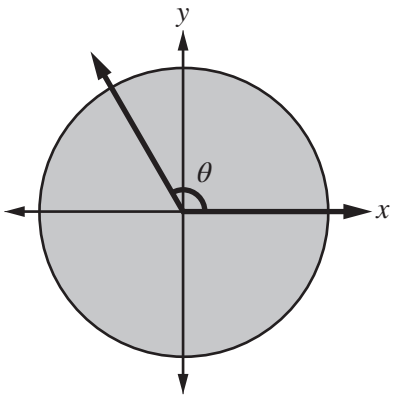
D $S = 35 + 20w$

2 The expression $2x + (x - 7)^2$ is equivalent to $x^2 + bx + 49$ for all values of x.

What is the value of b?

Enter your answer in the space provided.

3 Angle θ is positioned in a circle with its initial ray on the positive x-axis and its terminal ray $\frac{1}{3}$ of one complete revolution about the origin, as shown in the following diagram.



What is the measure of angle θ, in degrees and in radians?

Select one answer.

A 60° and $\frac{\pi}{3}$ radians

B 60° and $\frac{2\pi}{3}$ radians

C 120° and $\frac{\pi}{3}$ radians

D 120° and $\frac{2\pi}{3}$ radians

4 Let r, s, and w represent three distinct numbers.

- r is a nonzero **rational** number.
- s is a nonzero **rational** number.
- w is an **irrational** number.

Which of the following expressions **must** have an irrational value?

Select **all** that apply.

A $r + s$

B $r + w$

C rs

D rw

E r^2

F w^2

STOP

You have come to the end of Unit 1 of the test. Review your answers from Unit 1 only.

Unit 2
(Calculator)

Directions:

Today, you will take Unit 2 of the Algebra I/II Practice Test. You will be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your answer document. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses written within the provided space will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this unit ONLY. Do not go past the stop sign.

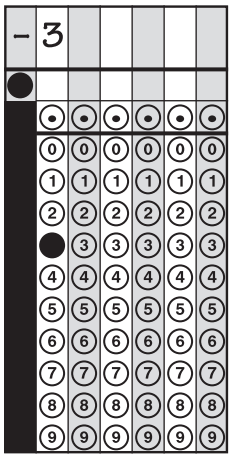
GO ON ▶

Directions for Completing the Answer Grids

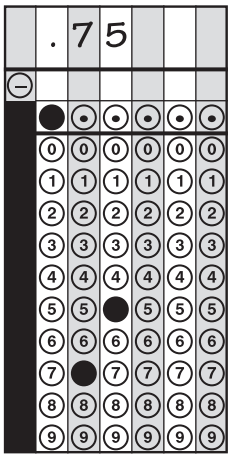
1. Work the problem and find an answer.
2. Write your answer in the boxes at the top of the grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each box, fill in the circle that matches the number or symbol you wrote above. Make a solid 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.



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



1 A shopping club published an advertisement to help increase its membership. One month after the advertisement was published, the shopping club had 200 members. The number of members in the shopping club can be modeled by the equation $y = 200 + 15(m - 1)$ for $m \geq 1$, where m is the number of months after the advertisement was published, and y is the number of members.

Which **two** of the following statements about the number of members in the club are true?

Select the **two** correct answers.

A There were 185 members in the club when the advertisement was published.

B There were 215 members in the club 2 months after the advertisement was published.

C Membership in the club increased by the same amount each month for $m \geq 1$.

D There were the same number of members at the end of month 2 as there were at the end of month 3.

E One new member joined the club every 2 days since the advertisement was published.

2 An investment of $2,500 doubles in value every 15 years. The function f defined by $f(x) = 2{,}500(2^{rx})$, represents the value of the investment, in dollars, x years after the investment is made, where r is a constant.

What is the value of r?

Enter your answer in the space provided.

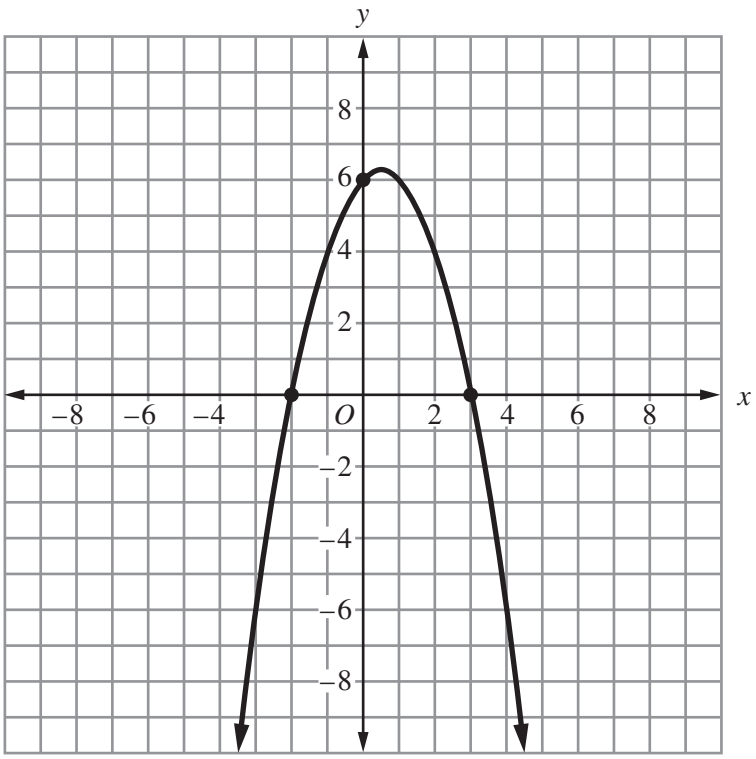
GO ON TO NEXT PAGE

3 Two quadratic relationships, J and K, are represented in the following table and graph, respectively.

Relationship J

x	-4	-3	-2	-1	0	1	2
y	10	0	-6	-8	-6	0	10

Relationship K



Which of the following statements are true for the relationships?

Select **all** that apply.

A The distance between the x-intercepts of J is 5 units.

B The distance between the x-intercepts of K is 5 units.

C The y-intercept of J is 6 units from the origin.

D The y-intercept of K is 6 units from the origin.

E J has a minimum value.

F K has a minimum value.

4 For each one-year period after a car was purchased, its value at the end of the year was 15% less than its value at the beginning of the year.

Part A

State whether the value of the car as a function of time after it was purchased is best modeled with a linear function, a quadratic function, or an exponential function, and explain why.

Enter your answer and your explanation in the space provided.

Part B

If the value of the car 2 years after it was purchased is $17,918, what was the value of the car when it was purchased? Show your work or explain your answer.

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

STOP

You have come to the end of Unit 2 of the test. Review your answers from Unit 2 only.

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