Name: Answer Key

UNIT #7 Study Guide
COMMON CORE ALGEBRA I

Study Guide

PART I QUESTIONS: Show all of your work.

1. Write an Monomial expression. Write a trinomial expression.

one part — no equal sign

$-2x^3$

3 parts — no equal sign

$4x^2-3x+1$

2. Explain when to use the Circle Method vs. the Box Method.

Factor
Add ( ) to the answer

Multiply
product
distribute

No ( ) in the answer

3. Which of the following trinomials is equivalent to $(4x-5)^2$?

$16x^2-20x-20x+25$

combine like terms

$16x^2-40x+25$

	$4x$	-5
$4x$	$16x^2$	$-20x$
-5	$-20x$	$+25$

4. What is $f(x)+g(x)$, if $f(x)=4x^2+6x-3$ and $g(x)=-3x^2-8x-4$

$4x^2+6x-3$

$-3x^2-8x-4$

$1x^2-2x-7$ OR x^2-2x-7

5. Which of the following is the value of $f(x)=3x^2-4x-2$ when $F(8)$?

$f(8)=3(8)^2-4(8)-2$

$f(8)=3(64)-32-2$

$f(8)=192-32-2$

$f(8)=158$

6. Which of the following is equivalent to the expression shown below? $(2x+1)(2x-1)$

$4x^2 - 2x + 2x - 1$

combine like terms

$4x^2 - 1$

	$2x$	-1
$2x$	$4x^2$	$-2x$
$+1$	$+2x$	-1

7. Which of the following is equivalent to the expression shown below? $(x-6)(x+6)$

$x^2 + 6x - 6x - 36$

combine like Terms

$x^2 - 36$

	x	$+6$
x	x^2	$+6x$
-6	$-6x$	-36

8. From questions 6-7, add the two expressions (answers) together.

$(4x^2 - 1) + (x^2 - 36)$

$4x^2 - 1 + x^2 - 36$ Distribute

$4x^2 + x^2 - 1 - 36$ commute

$5x^2 - 37$ combine like terms

9. Which of the following is the correct distributed form of the binomial $2x^2(4x+5)$ distribute

Draw the arrows

$8x^3 + 10x^2$

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10. What is the product of $(3x-3)$ and $(x+1)$?

	x	+1
3x	$3x^2$	$+3x$
-3	$-3x$	-3

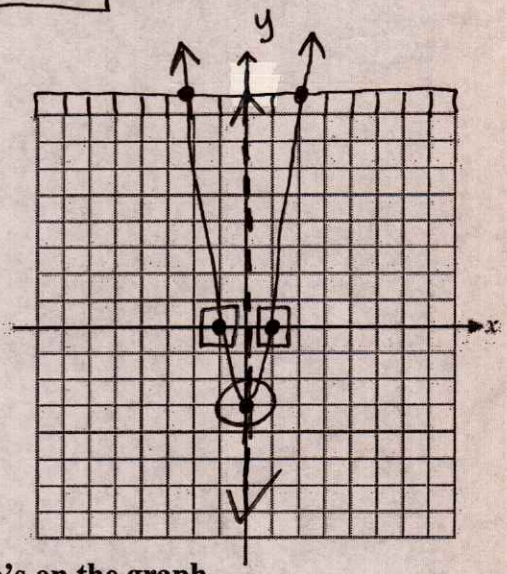
$3x^2+3x-3x-3$

combine

$3x^2-3$

11. Make a table and graph the answer from #10.

x	F(x)
-2	9
-1	0
0	-3
1	0
2	9



12. What are the zero's (roots) of the parabola from #10? **BOX the Zero's on the graph.**

$(-1, 0)$ and $(1, 0)$

always 0 "Zero" Always 0 "Zero"

13. What is the vertex and axis of symmetry of the quadratic from #10? **CIRCLE the Vertex on the graph. DRAW the axis of symmetry.**

Vertex $(0, -3)$

Very bottom or Very top

always $x = 0$ for Down the center

14. Write the expression below in simplest form. $(4x^2-7x+3)-(5x^2+2x-6)$

$4x^2-7x+3-5x^2-2x+6$ changed sign when distributing a negative

$4x^2-5x^2-7x-2x+3+6$ Commute Combine like terms

$-1x^2-9x+9$

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15. Which of the following is equivalent to $8\sqrt{52}$?

Does $8\sqrt{52} = 16\sqrt{13}$? yes

Does $57.6888 = 57.6888$? yes

16. Which of the following numbers is irrational? Simplify each answer.

Is $\sqrt{4} + \frac{1}{3}$ irrational? No Why? fractions are rational

Is $\sqrt{3} + 5$ irrational? yes Why? This is a never ending and not repeating decimal.

17. Solve the following quadratic equation for x.

$(x+3)^2 = 49$

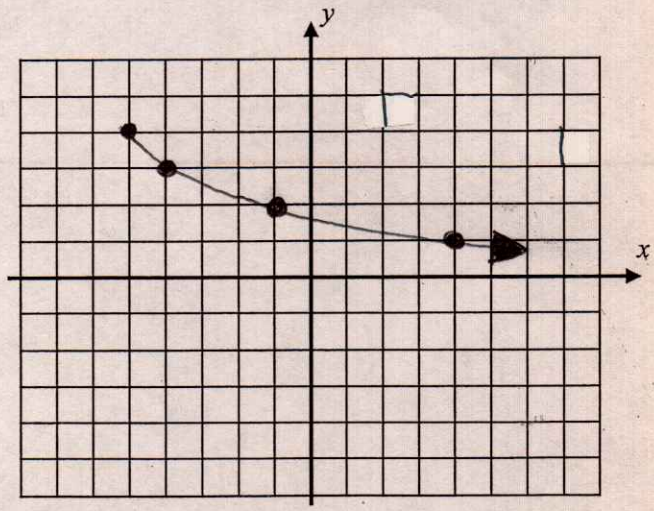
$\sqrt{\quad}$ $\sqrt{\quad}$ ← recognize the ± sign. It means +7 and -7

$x+3 = \pm 7$

$-3 \quad -3$

$x = 4$ and $x = -10$

18. Graph the function $f(x) = 4 - \sqrt{x+5}$ on the grid below.



19. Write your table from #18.

skip the decimals on the table.

x	f(x)
-5	4
-4	3
-1	2
4	1