

# Cornell Notes

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Topic

Class/ Subject Algebra II P.3  
Mrs. A. Berry

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Warm-up worksheet

1.  $(x-4)^2 = (-\sqrt{2}x)^2$

$x^2 - 8x + 16 = 2x$

$x^2 - 10x + 16 = 0 \rightarrow (x-8)(x-2)$

$x=8 \quad x=2$

AW Check

# 7  $(\sqrt{5x-2})^2 = (\sqrt{x+6})^2$

$5x-2 = x+6$

$4x = 8$

$x=2$

# 13  $(\sqrt{9x^2+4x-4})^2 = 3x^2$

$9x^2+4x-4 = 9x^2$

$4x-4 = 0$

$4x=4 \quad x=1$

# 10

$(x-3)^2 = (\sqrt{30-2x})^2$

$x^2-6x+9 = 30-2x$

$x^2-4x-21 = 0 \rightarrow (x-7)(x+3) = 0$

$x=7 \quad x=-3$

-/handout

• students began working in class.

Students began reviewing for their test tomorrow.



## Warm-up

Sometimes a method used to solve an equation gives *extraneous solutions* - values which arise from the solution method but that are not solutions of the original equation. This can happen when a step in the solution process is not strictly reversible, for example, if both sides of an equation are squared at some point. These roots can be found by checking your solution within the original equation.

1. Solve  $x - 4 = \sqrt{2x}$ . Check for extraneous solutions.

2. Solve  $\sqrt{3x+1} = \sqrt{x-5}$ . Check for extraneous solutions.



Make sure to show all your work on a separate piece of paper. This review is due on the day of the test.

Simplify each radical expression. Use absolute value symbols when needed.

1.  $\sqrt{81x^4}$       2.  $\sqrt[3]{8g^6}$       3.  $\sqrt[3]{125x^9}$       4.  $\sqrt[5]{243x^5y^{15}}$

Simplify. Assume all variables are positive.

5.  $\sqrt{18x^5}$       6.  $\sqrt[3]{-125y^2z^4}$       7.  $\sqrt[4]{256s^7t^{12}}$       8.  $\sqrt[3]{-16a^{12}}$

Solve. Check for extraneous solutions.

9.  $\sqrt{3x+4} = 5$       10.  $3\sqrt{2x+4} = 12$

Let  $f(x) = 4x - 1$  and  $g(x) = 2x^2 + 3$ . Perform each function operation and then find the domain.

11.  $f(x) + g(x)$       12.  $g(x) - f(x)$

13.  $-f(x) + 2(g(x))$

Let  $f(x) = 2x^2 + x - 3$  and  $g(x) = x - 1$ . Perform each function operation and then find the domain restriction for # 15 & 16.

14.  $(f \bullet g)(x)$       15.  $\frac{f(x)}{g(x)}$

16.  $\frac{g(x)}{f(x)}$

Let  $f(x) = -3x + 2$  and  $h(x) = -2x^2 + 9$ . Find each value or expression.

17.  $(f \circ h)(-2)$       18.  $(h \circ h)(4)$

19.  $(f \circ f)(x)$       20.  $(f \circ h)(x)$

Graph each relation and its inverse. Make a t-table using the given domain, then reflect over the  $y = x$  line.

21.  $y = 2x^2 - 3$   
 $x = -2, -1, 0, 1, 2$

22.  $f(x) = \sqrt{x+4}$   
 $x = -4, -3, 0, 5$

Find the inverse of each function algebraically. Is the inverse of function?

23.  $f(x) = \sqrt{x-2}$

24.  $f(x) = 2x - 1$

25.  $y = 3x^2 - 2$

Verify that each function below are inverses of one another.

26.  $f(x) = 3x - 2; g(x) = \frac{x+2}{3}$

27.  $f(x) = x^2; g(x) = \sqrt{x}$