<table>
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<td>UNIT 2
LINEAR RELATIONSHIPS
Cornell Notes/Summary Sheet</td>
<td>Name: _____
Period: _____</td>
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<tr><td colspan="3"></td></tr>
<tr>
<td><u>Lesson 2.1 – Big Ideas</u>
• Independent quantity
• Dependent quantity
• Rate of change
• Input value
• Output value
• Using function notation to solve linear equations
• Using intersection points to solve linear equations</td>
<td colspan="2"><u>Your Notes</u></td>
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<td><u>Lesson 2.2 – Big Ideas</u>
• Contextual meaning of the input value, output value, rate of change, and y-intercept
• Using tables, equations, and graphs to model & solve linear situation</td>
<td colspan="2"><u>Your Notes</u></td>
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<td><u>Lesson 2.3– Big Ideas</u>
• Writing & solving inequalities
• Representing inequalities on a number line & a coordinate plane
• Inequalities w/a negative rate of change</td>
<td colspan="2"><u>Your Notes</u></td>
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Lesson 2.4 – Big Ideas	**Your Notes**
• Compound inequalities • Conjunction • Disjunction • Representing compound inequalities on a number line • Solving compound inequalities	-

Lessons 14.1 & 14.2

Real Number System: Sets of Numbers

Name/Symbol	Description	Examples
Natural numbers $\mathbb{N}$	$\{1, 2, 3, 4, 5, \ldots\}$ These are the numbers that we use for counting.	$2, 3, 5, 17$
Whole numbers $\mathbb{W}$	$\{0, 1, 2, 3, 4, 5, \ldots\}$ The set of whole numbers includes 0 and the natural numbers.	$0, 2, 3, 5, 17$
Integers $\mathbb{Z}$	$\{\ldots, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, \ldots\}$ The set of integers includes the negatives of the natural numbers and the whole numbers.	$-17, -5, -3, -2, 0, 2, 3, 5, 17$
Rational numbers $\mathbb{Q}$	$\left\{\frac{a}{b} \middle\| a \text{ and } b \text{ are integers and } b \neq 0\right\}$ This means that b is not equal to zero. The set of rational numbers is the set of all numbers that can be expressed as a quotient of two integers, with the denominator not 0. Rational numbers can be expressed as terminating or repeating decimals.	$-17 = \frac{-17}{1}, -5 = \frac{-5}{1}, -3, -2,$ $0, 2, 3, 5, 17,$ $\frac{2}{5} = 0.4,$ $\frac{-2}{3} = -0.6666\ldots = -0.\overline{6}$
Irrational numbers $\mathbb{I}$	The set of irrational numbers is the set of all numbers whose decimal representations are neither terminating nor repeating. Irrational numbers cannot be expressed as a quotient of integers.	$\sqrt{2} \approx 1.414214$ $-\sqrt{3} \approx -1.73205$ $\pi \approx 3.142$ $-\frac{\pi}{2} \approx -1.571$

Properties of Real Numbers

- Commutative Property – Changing order when adding (or multiplying), does not affect the sum (or product): $a + b = b + a$ OR $a \times b = b \times a$
- Associative Property – Changing grouping when adding (or multiplying), does not affect the sum (or product): $(a + b) + c = a + (b + c)$ OR $(a \times b) \times c = a \times (b \times c)$
- Distributive Property – Multiplication distributes over addition: $a(b + c) = ab + ac$
- Additive Identity: $a + 0 = a$
- Multiplicative Identity: $a \times 1 = a$
- Additive Inverse: $a + (-a) = 0$
- Multiplicative Inverse: $a \times \frac{1}{a} = 1$

Staple the Chapter 2 Summary, from your text, to this summary sheet.