

Summer Geometry Semester 1 Unit 1 Pre Test Analysis Induction, Logic, Structures, poin...

Lesson 015 | Geometry | Logic, conjectures and proof • Segments, angles and geometric basics

<https://www.youtube.com/watch?v=bfh1Qz4L8gQ>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Consider: "If an integer is divisible by 84, then it is divisible by 7." Write its converse, inverse, and contrapositive. Which are true?

02

B lies between A and C. $AB=5x+7$, $BC=7x+2$, and $AC=33$. Find x and both smaller lengths.

03

Consider: "If an integer is divisible by 16, then it is divisible by 2." Write its converse, inverse, and contrapositive. Which are true?

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04

B lies between A and C. $AB=3x+2$, $BC=5x+13$, and $AC=31$. Find x and both smaller lengths.

05

Consider: "If an integer is divisible by 6, then it is divisible by 2." Write its converse, inverse, and contrapositive. Which are true?

06

B lies between A and C. $AB=14x+13$, $BC=3x+9$, and $AC=73$. Find x and both smaller lengths.

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01

Consider: "If an integer is divisible by 84, then it is divisible by 7." Write its converse, inverse, and contrapositive. Which are true?

Converse: divisible by 7 implies divisible by 84; false (counterexample 7). Inverse: not divisible by 84 implies not divisible by 7; false (same counterexample). Contrapositive: not divisible by 7 implies not divisible by 84; true, equivalent to the original true statement.

02

B lies between A and C. $AB=5x+7$, $BC=7x+2$, and $AC=33$. Find x and both smaller lengths.

$AB+BC=AC$: $12x+9=33$. Thus $x=2$, $AB=17$, $BC=16$; their sum is AC .

03

Consider: "If an integer is divisible by 16, then it is divisible by 2." Write its converse, inverse, and contrapositive. Which are true?

Converse: divisible by 2 implies divisible by 16; false (counterexample 2). Inverse: not divisible by 16 implies not divisible by 2; false (same counterexample). Contrapositive: not divisible by 2 implies not divisible by 16; true, equivalent to the original true statement.

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04

B lies between A and C. $AB=3x+2$, $BC=5x+13$, and $AC=31$. Find x and both smaller lengths.

$AB+BC=AC$: $8x+15=31$. Thus $x=2$, $AB=8$, $BC=23$; their sum is AC .

05

Consider: "If an integer is divisible by 6, then it is divisible by 2." Write its converse, inverse, and contrapositive. Which are true?

Converse: divisible by 2 implies divisible by 6; false (counterexample 2). Inverse: not divisible by 6 implies not divisible by 2; false (same counterexample). Contrapositive: not divisible by 2 implies not divisible by 6; true, equivalent to the original true statement.

06

B lies between A and C. $AB=14x+13$, $BC=3x+9$, and $AC=73$. Find x and both smaller lengths.

$AB+BC=AC$: $17x+22=73$. Thus $x=3$, $AB=55$, $BC=18$; their sum is AC .