

Summer Geometry Semester 1 Unit 3 Part 1

Lesson 018 | Geometry | Right and special right triangles

<https://www.youtube.com/watch?v=mBtV0IPeI5c>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

A 30° - 60° - 90° triangle has shorter leg 66. Find the longer leg and hypotenuse.

02

A right triangle has legs 189 and 252. Find its hypotenuse and the altitude to the hypotenuse.

03

A right triangle has legs 60 and 80. Find its hypotenuse and the altitude to the hypotenuse.

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04

A 30° - 60° - 90° triangle has shorter leg 84. Find the longer leg and hypotenuse.

05

A right triangle has legs 108 and 144. Find its hypotenuse and the altitude to the hypotenuse.

06

A right triangle has legs 18 and 24. Find its hypotenuse and the altitude to the hypotenuse.

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01

A 30° - 60° - 90° triangle has shorter leg 66. Find the longer leg and hypotenuse.

The side ratio is $1:\sqrt{3}:2$. Longer leg $66\sqrt{3}$; hypotenuse 132.

02

A right triangle has legs 189 and 252. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 315. Equate areas: $(1/2)(189)(252)=(1/2)(315)h$, so $h=756/5$.

03

A right triangle has legs 60 and 80. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 100. Equate areas: $(1/2)(60)(80)=(1/2)(100)h$, so $h=48$.

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04

A 30° - 60° - 90° triangle has shorter leg 84. Find the longer leg and hypotenuse.

The side ratio is $1:\sqrt{3}:2$. Longer leg $84\sqrt{3}$; hypotenuse 168.

05

A right triangle has legs 108 and 144. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 180. Equate areas: $(1/2)(108)(144)=(1/2)(180)h$, so $h=432/5$.

06

A right triangle has legs 18 and 24. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 30. Equate areas: $(1/2)(18)(24)=(1/2)(30)h$, so $h=72/5$.