

The Secret of Pythagorean Theorem and its Converses (Big Idea Geometry 9.1)

Lesson 049 | Geometry | Right and special right triangles

<https://www.youtube.com/watch?v=uPPyRtA9a3Q>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A 30° - 60° - 90° triangle has shorter leg 54. Find the longer leg and hypotenuse.

02

A right triangle has legs 42 and 56. Find its hypotenuse and the altitude to the hypotenuse.

03

A right triangle has legs 126 and 168. Find its hypotenuse and the altitude to the hypotenuse.

The Secret of Pythagorean Theorem and its Converses (Big Idea Geometry 9.1)

Lesson 049 | Geometry | Right and special right triangles

<https://www.youtube.com/watch?v=uPPyRtA9a3Q>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

04

A 30° - 60° - 90° triangle has shorter leg 42. Find the longer leg and hypotenuse.

05

A right triangle has legs 48 and 64. Find its hypotenuse and the altitude to the hypotenuse.

06

A right triangle has legs 252 and 336. Find its hypotenuse and the altitude to the hypotenuse.

The Secret of Pythagorean Theorem and its Converses (Big Idea Geometry 9.1)

Lesson 049 | Geometry | Right and special right triangles

<https://www.youtube.com/watch?v=uPPyRtA9a3Q>

Original practice aligned to the saved video title.

01

A 30° - 60° - 90° triangle has shorter leg 54. Find the longer leg and hypotenuse.

The side ratio is $1:\sqrt{3}:2$. Longer leg $54\sqrt{3}$; hypotenuse 108.

02

A right triangle has legs 42 and 56. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 70. Equate areas: $(1/2)(42)(56)=(1/2)(70)h$, so $h=168/5$.

03

A right triangle has legs 126 and 168. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 210. Equate areas: $(1/2)(126)(168)=(1/2)(210)h$, so $h=504/5$.

The Secret of Pythagorean Theorem and its Converses (Big Idea Geometry 9.1)

Lesson 049 | Geometry | Right and special right triangles

<https://www.youtube.com/watch?v=uPPyRtA9a3Q>

Original practice aligned to the saved video title.

04

A 30° - 60° - 90° triangle has shorter leg 42. Find the longer leg and hypotenuse.

The side ratio is $1:\sqrt{3}:2$. Longer leg $42\sqrt{3}$; hypotenuse 84.

05

A right triangle has legs 48 and 64. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 80. Equate areas: $(1/2)(48)(64)=(1/2)(80)h$, so $h=192/5$.

06

A right triangle has legs 252 and 336. Find its hypotenuse and the altitude to the hypotenuse.

Pythagorean theorem gives hypotenuse 420. Equate areas: $(1/2)(252)(336)=(1/2)(420)h$, so $h=1008/5$.