

2022 Geometry Heron's and Brahmaguta's Formula Students Have Never Seen Before

Lesson 086 | Geometry | Heron and Brahmagupta formulas

https://www.youtube.com/watch?v=_jzVMjelTyQ

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Use Heron's formula for a triangle with sides 9,12,15; then use Brahmagupta's formula for a cyclic quadrilateral with sides 13,8,13,8.

02

Use Heron's formula for a triangle with sides 6,8,10; then use Brahmagupta's formula for a cyclic quadrilateral with sides 4,3,4,3.

03

Use Heron's formula for a triangle with sides 39,52,65; then use Brahmagupta's formula for a cyclic quadrilateral with sides 4,10,4,10.

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04

Use Heron's formula for a triangle with sides 33,44,55; then use Brahmagupta's formula for a cyclic quadrilateral with sides 6,10,6,10.

05

Use Heron's formula for a triangle with sides 21,28,35; then use Brahmagupta's formula for a cyclic quadrilateral with sides 6,10,6,10.

06

Use Heron's formula for a triangle with sides 30,40,50; then use Brahmagupta's formula for a cyclic quadrilateral with sides 7,8,7,8.

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- 01** Use Heron's formula for a triangle with sides 9,12,15; then use Brahmagupta's formula for a cyclic quadrilateral with sides 13,8,13,8.

Triangle semiperimeter 18; area $\sqrt{(18)(9)(6)(3)}=54$. Cyclic quadrilateral semiperimeter 21; area $\sqrt{(8)(13)(8)(13)}=104$. Brahmagupta requires cyclicity.

- 02** Use Heron's formula for a triangle with sides 6,8,10; then use Brahmagupta's formula for a cyclic quadrilateral with sides 4,3,4,3.

Triangle semiperimeter 12; area $\sqrt{(12)(6)(4)(2)}=24$. Cyclic quadrilateral semiperimeter 7; area $\sqrt{(3)(4)(3)(4)}=12$. Brahmagupta requires cyclicity.

- 03** Use Heron's formula for a triangle with sides 39,52,65; then use Brahmagupta's formula for a cyclic quadrilateral with sides 4,10,4,10.

Triangle semiperimeter 78; area $\sqrt{(78)(39)(26)(13)}=1014$. Cyclic quadrilateral semiperimeter 14; area $\sqrt{(10)(4)(10)(4)}=40$. Brahmagupta requires cyclicity.

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04

Use Heron's formula for a triangle with sides 33,44,55; then use Brahmagupta's formula for a cyclic quadrilateral with sides 6,10,6,10.

Triangle semiperimeter 66; area $\sqrt{((66)(33)(22)(11))}=726$. Cyclic quadrilateral semiperimeter 16; area $\sqrt{((10)(6)(10)(6))}=60$. Brahmagupta requires cyclicity.

05

Use Heron's formula for a triangle with sides 21,28,35; then use Brahmagupta's formula for a cyclic quadrilateral with sides 6,10,6,10.

Triangle semiperimeter 42; area $\sqrt{((42)(21)(14)(7))}=294$. Cyclic quadrilateral semiperimeter 16; area $\sqrt{((10)(6)(10)(6))}=60$. Brahmagupta requires cyclicity.

06

Use Heron's formula for a triangle with sides 30,40,50; then use Brahmagupta's formula for a cyclic quadrilateral with sides 7,8,7,8.

Triangle semiperimeter 60; area $\sqrt{((60)(30)(20)(10))}=600$. Cyclic quadrilateral semiperimeter 15; area $\sqrt{((8)(7)(8)(7))}=56$. Brahmagupta requires cyclicity.