

## Geometry 8 1 Proportionality Geometric Mean and Arithmetic Mean

Lesson 084 | Geometry | Arithmetic and geometric means

<https://www.youtube.com/watch?v=6xeb3cD4LHw>

Original practice aligned to the saved video title.

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Show your reasoning.

**01**

Find the arithmetic mean and geometric mean of 36 and 25. Verify  $AM \geq GM$ .

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**02**

Find the arithmetic mean and geometric mean of 64 and 36. Verify  $AM \geq GM$ .

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**03**

Find the arithmetic mean and geometric mean of 16 and 64. Verify  $AM \geq GM$ .

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04

Find the arithmetic mean and geometric mean of 4 and 16. Verify  $AM \geq GM$ .

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05

Find the arithmetic mean and geometric mean of 64 and 25. Verify  $AM \geq GM$ .

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06

Find the arithmetic mean and geometric mean of 100 and 25. Verify  $AM \geq GM$ .

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01

Find the arithmetic mean and geometric mean of 36 and 25. Verify  $AM \geq GM$ .

$AM = (36 + 25)/2 = 61/2$ ;  $GM = \sqrt{(900)} = 30$ . Difference =  $(6 - 5)^2/2 = 1/2 \geq 0$ .

02

Find the arithmetic mean and geometric mean of 64 and 36. Verify  $AM \geq GM$ .

$AM = (64 + 36)/2 = 50$ ;  $GM = \sqrt{(2304)} = 48$ . Difference =  $(8 - 6)^2/2 = 2 \geq 0$ .

03

Find the arithmetic mean and geometric mean of 16 and 64. Verify  $AM \geq GM$ .

$AM = (16 + 64)/2 = 40$ ;  $GM = \sqrt{(1024)} = 32$ . Difference =  $(4 - 8)^2/2 = 8 \geq 0$ .

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04

Find the arithmetic mean and geometric mean of 4 and 16. Verify  $AM \geq GM$ .

$AM = (4+16)/2 = 10$ ;  $GM = \sqrt{(64)} = 8$ . Difference =  $(2-4)^2/2 = 2 \geq 0$ .

05

Find the arithmetic mean and geometric mean of 64 and 25. Verify  $AM \geq GM$ .

$AM = (64+25)/2 = 89/2$ ;  $GM = \sqrt{(1600)} = 40$ . Difference =  $(8-5)^2/2 = 9/2 \geq 0$ .

06

Find the arithmetic mean and geometric mean of 100 and 25. Verify  $AM \geq GM$ .

$AM = (100+25)/2 = 125/2$ ;  $GM = \sqrt{(2500)} = 50$ . Difference =  $(10-5)^2/2 = 25/2 \geq 0$ .