

**Math Domain**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Number/Quantity | <input checked="" type="checkbox"/> Shape/Space | <input type="checkbox"/> Function/Pattern |
| <input type="checkbox"/> Chance/Data     | <input type="checkbox"/> Arrangement            |   |

**Math Actions** (possible weights: 0 through 4)

- |  |  |
|--|--|
| <input type="checkbox"/> 0 Modeling/Formulating          | <input type="checkbox"/> 2 Manipulating/Transforming |
| <input type="checkbox"/> 3 Inferring/Drawing Conclusions | <input type="checkbox"/> 2 Communicating             |

**Math Big Ideas**

- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Scale       | <input type="checkbox"/> Reference Frame    | <input type="checkbox"/> Representation                 |
| <input type="checkbox"/> Continuity             | <input type="checkbox"/> Boundedness        | <input checked="" type="checkbox"/> Invariance/Symmetry |
| <input checked="" type="checkbox"/> Equivalence | <input type="checkbox"/> General/Particular | <input type="checkbox"/> Contradiction                  |
| <input type="checkbox"/> Use of Limits          | <input type="checkbox"/> Approximation      | <input type="checkbox"/> Other                          |

- The areas are respectively  $\frac{1}{2}\pi a^2$ ,  $\frac{1}{2}\pi b^2$ , and  $\frac{1}{2}\pi c^2$ . Since  $a^2 + b^2 = c^2$ , it is also true that  $\frac{1}{2}\pi a^2 + \frac{1}{2}\pi b^2 = \frac{1}{2}\pi c^2$ .
- The areas are respectively  $\frac{1}{2}a^2$ ,  $\frac{1}{2}b^2$ , and  $\frac{1}{2}c^2$ . Since  $a^2 + b^2 = c^2$ , it is also true that  $\frac{1}{2}a^2 + \frac{1}{2}b^2 = \frac{1}{2}c^2$ .
- It is in fact true that for any set of similar figures, the sum of the areas of the figures on the two legs will equal the area of the figure on the hypotenuse.

	partial level (1 or 2)	full level (3)
<b>Modeling/ Formulating</b> (weight: 0)		
<b>Transforming/ Manipulating</b> (weight: 2)	For <b>1</b> and <b>2</b> , performs numerical computations for a chosen example (for example, arbitrarily chooses a set of numbers for $a$ , $b$ , and $c$ , and bases answer solely on the result for that set of numbers).	For <b>1</b> and <b>2</b> , correctly performs the algebra needed to fully justify the answers.
<b>Inferring/ Drawing Conclusions</b> (weight: 3)	Makes correct comparisons in <b>1</b> and <b>2</b> but does not achieve a correct generalization in response to <b>3</b> .	Makes correct comparisons in <b>1</b> and <b>2</b> . Achieves a correct generalization in response to <b>3</b> .
<b>Communicating</b> (weight: 2)	Gives answers that are not consistently clear.	Answers all questions clearly.