

Problems involving Algebraic Operations

What is the value of $a^2 + 2ab + b^2$

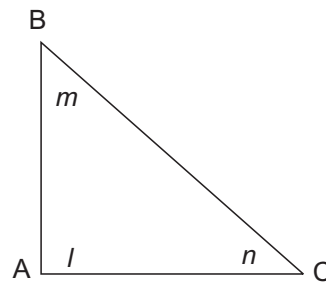
1. $a + b = 0$
2. $a = -b$

The correct answer choice is (D), a conclusion more easily seen once the expression has been factorized.

$$a^2 + 2ab + b^2 = (a + b)(a + b)$$

Statement (1) is sufficient because it implies that the value of the entire expression is zero. Statement (2) is also sufficient, for it implies that $a + b = 0$.

Problem involving Geometry



(b) What is the area of $\triangle ABC$, above?

1. The degree measures of l, m, n are in the ratio of 3: 2: 1, respectively.
2. $BA = 3\sqrt{2}$.

Each statement alone is insufficient to answer the question.

Let the angles be $a, 2a$ and $3a$.

With use of statement (2), we get the measure of BA ,

$\therefore BC$ and AC can be obtained using properties of 30–60–90 Δ .

And hence, the area can be determined.

$$(a + 2a + 3a = 180^\circ)$$

$$6a = 180^\circ$$

$$a = 30^\circ)$$

Since both statements taken together yield the answer, but neither individually do, the correct answer choice is (C).