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The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:

A. 20

B. 30

C. 40

D. None of these

Option A. 20 is the right answer



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Let suppose *The sum of the squares of three numbers is 138 i.e*

$$a^2 + b^2 + c^2 = 138$$

And, *the sum of their products taken two at a time is 131 i.e*

$$(ab + bc + ca) = 131$$

Now, as we know that

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$$

By putting the values, we get

$$(a + b + c)^2 = 138 + 2 \times 131$$



The sum of the squares of three numbers is 138, while the sum of their products taken two at a time is 131. Their sum is:

$$(a + b + c)^2 = 400$$

By taking under root on both sides, we get

$$\sqrt{(a + b + c)^2} = \sqrt{400}$$

$$(a + b + c) = 20$$

Hence, if the sum of the squares of **three numbers is 138**, while the sum of their **products taken two at a time is 131**. Thenm their sum is 20 as proved above.

which is our right answer:)



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