

Exemplar Problem

Mathematical Reasoning

Which of the following sentences are statements? Justify

(viii) Every square is a rectangle.

Solution:

A statement is a declarative sentence if it is either true or false but not both.

So, the given sentence "Every square is a rectangle." is true.

Hence, it is a true statement

(ix) Sum of opposite angles of a cyclic quadrilateral is 180° .

Solution:

A statement is a declarative sentence if it is either true or false but not both.

By the properties of quadrilateral "Sum of opposite angles of a cyclic quadrilateral is 180° ."

So, the given sentence is true.

Hence, it is a statement

(x) $\sin^2 x + \cos^2 x = 0$

Solution:

A statement is a declarative sentence if it is either true or false but not both.

According to the laws of trigonometry, $\sin^2 x + \cos^2 x = 1$

So, the given expression is False.

Hence, it is a false statement