

Mathematics

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(Chapter – 5) (Introduction to Euclid's Geometry)(Exemplar Problems)
(Class – IX)

Exercise 5.4

Question 5:

Read the following axioms:

- (i) Things which are equal to the same thing are equal to one another.
- (ii) If equals are added to equals, the wholes are equal.
- (iii) Things which are double of the same thing are equal to one another.

Check whether the given system of axioms is consistent or inconsistent.

Answer 5:

Some of the Euclid's axioms are

- ✓ *The things which are equal to the same thing are equal to one another.*
- ✓ *If equals be added to the equals, the wholes are equal.*
- ✓ *If equals be subtracted from equals, the remainders are equals.*
- ✓ *Things which coincide with one another are equal to one another.*
- ✓ *The whole is greater than the part.*
- ✓ *Things which are double of the same thing are equal to one another.*
- ✓ *Things which are halves of the same thing are equal to one another.*

Given axioms are:

- (i) Things which are equal to the same thing are equal to one another.
- (ii) If equals are added to equals, the wholes are equal.
- (iii) Things which are double of the same things are equal to one another.

Thus, given three axioms are Euclid's axioms which do not contradict any axioms. So, given system of axioms is consistent.

