

Simplification Questions Overview

Simplification Questions have a good weightage in the Banking Exam and the type of question asked in Banking exam is similar to the question mentioned below. It has been solved and explained by Gargi.ai Experts and they have tried to elaborate the concept used in Simplification Questions.

Question

If $(a \div b) = 4 \div 5$ and $(b \div c) = 15 \div 16$ then, $(c2 - a2) \div (c2 + a2)$ is = ?

Difficulty : Moderate

Average Time : 29 Seconds

Options :

1. $23 \div 25$
2. $8 \div 55$
3. $7 \div 25$
4. $8 \div 35$
5. Cannot be determined

Solution

The correct answer is **Option 3** i.e $7 \div 25$

Concept	Application
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$$(a \div b) = (4 \div 5)$$

$$5a = 4b$$

$$(b \div c) = (15 \div 16)$$

$$16b = 15c$$

$$4 \times 4b = 15c$$

$$4 \times 5a = 15c$$

$$20a = 15c$$

$$4a = 3c$$

$$a = 3c \div 4$$

$$c^2 - a^2 = c^2 - (3c \div 4)^2$$

$$= c^2 - 9c^2 \div 16$$

$$= c^2 (1 - 9 \div 16)$$

$$= c^2 (7 \div 16)$$

$$c^2 + a^2 = c^2 + (3c \div 4)^2$$

$$= c^2 + 9c^2 \div 16$$

$$= c^2 (1 + 9 \div 16)$$

$$= c^2 (25 \div 16)$$

$$(c^2 - a^2) \div (c^2 + a^2) = 7 \div 25$$

