

CDS-AFCAT 1 2025

SSBCrack
EXAMS

LIVE

MATHS

PROFIT & LOSS

CLASS 3

NAVJYOTI SIR





30 Sep 2024 Live Classes Schedule

8:00AM	SEPTEMBER 2024 MONTHLY CURRENT AFFAIRS	RUBY MA'AM
10:00 AM	SEPTEMBER 2024 MONTHLY DEFENCE UPDATES	DIVYANSHU SIR

NDA 1 2025 LIVE CLASSES

11:30AM	GK - WORLD GEOGRAPHY	RUBY MA'AM
1:00PM	BIOLOGY - COMMON EPIDEMICS	SHIVANGI MA'AM
4:00PM	MATHS - LOGARITHMS - CLASS 1	NAVJYOTI SIR
5:30PM	ENGLISH - WORD CLASSES - CLASS 1	ANURADHA MA'AM

CDS 1 2025 LIVE CLASSES

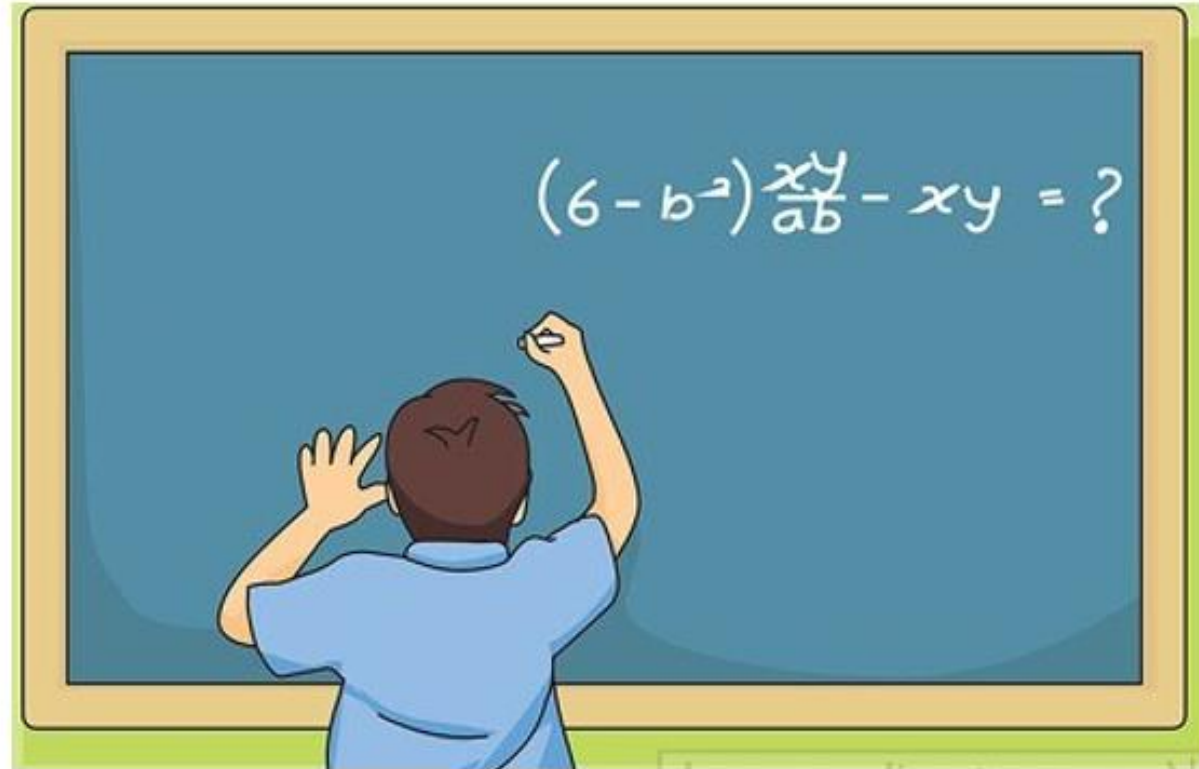
11:30AM	GK - WORLD GEOGRAPHY	RUBY MA'AM
1:00PM	BIOLOGY - COMMON EPIDEMICS	SHIVANGI MA'AM
2:30PM	MATHS - PROFIT & LOSS - CLASS 3	NAVJYOTI SIR
5:30PM	ENGLISH - WORD CLASSES - CLASS 1	ANURADHA MA'AM

AFCAT 1 2025 LIVE CLASSES

10:00AM	REASONING - FIGURE CLASSIFICATION	RUBY MA'AM
2:30PM	MATHS - PROFIT & LOSS - CLASS 3	NAVJYOTI SIR
4:00PM	STATIC GK - BOOKS & AUTHORS	DIVYANSHU SIR
5:30PM	ENGLISH - WORD CLASSES - CLASS 1	ANURADHA MA'AM



PRACTISE
TIME !



A shopkeeper marks his goods 30% above the cost price. If he allows a discount of 15% on the mark price. Then his profit or loss percent is?

$$\left\{ \left(\frac{MP}{CP} \right) = \frac{100 + p\%}{100 - d\%} \right\}$$

$$\frac{130}{100} = \frac{100 + p}{85}$$

$$\frac{130 \times 85}{100} - 100 = p$$

$$\frac{11050}{100} - 100 = p$$

$$110.5 - 100 = p$$

$$10.5 = p$$

$$MP = CP \left(1 + \frac{30}{100} \right)$$

$$\frac{MP}{CP} = \frac{130}{100}$$

$$\frac{221 - 200}{2} = p$$

$$\frac{21}{2} = p$$

$$p\% = 10.5\%$$

CDS & AFCAT 1 2025 LIVE CLASS - MATHS - PART 3

$$CP \xrightarrow{+r\%} MP \xrightarrow{-d\%} \underline{SP}$$

$$\left(r - \frac{(100-d)}{100} - d \right) \% \begin{cases} +ve - \text{profit} \\ -ve - \underline{\text{loss}} \end{cases}$$

The MP of an article is fixed in such a way that after allowing a discount of 20% a profit of 30% is obtained. Then mark-up percent is ?

$$\left(\frac{MP}{CP} \right) = \frac{100 + p\%}{100 - d\%}$$

$$\frac{MP}{CP} = \frac{100 + 30}{100 - 20}$$

$$\frac{MP}{CP} = \frac{130}{80}$$

$$\frac{MP - CP}{CP} = \frac{130 - 80}{80} = \frac{50}{80} = \frac{5}{8}$$

$$\left(\frac{MP - CP}{CP} \times 100 \right)$$

$$\frac{5}{8} \times 100 = \frac{500}{8}$$

$$= 62.5\%$$

A trader gives successive discounts of 20%, 10% and 5% respectively. What is his overall discount? (PYQ - 2021)

A. 30%

B. 31.6% ✓

C. 32.8%

D. 35%

$$\left[(a+b+c) - \frac{(ab+bc+ca)}{100} + \frac{abc}{10000} \right] \%$$

$$\left[35 - \frac{350}{100} + \frac{1000}{10000} \right] \%$$

$$= 35 - 3.5 + 0.1$$

$$= 35 - 3.4$$

$$= \underline{31.6\%}$$

CDS & AFCAT 1 2025 LIVE CLASS - MATHS - PART 3

(OR)

$$100 \xrightarrow{-20\%} 80 \xrightarrow{-10\%} (80 - 8) = 72 \xrightarrow{-5\%} 72 - 3.6 = \underline{68.4}$$

$\left(\frac{7.2}{2} = 3.6\right)$

$$100 \longrightarrow 68.4$$

Overall discount % = difference

$$\left\{ \begin{array}{l} \underline{100 - 68.4} = \underline{31.6\%} \end{array} \right.$$

A trader gives successive discounts of 20%, 10% and 5% respectively. What is his overall discount ? (PYQ – 2021)

- A. 30 %
- B. 31.6%**
- C. 32.8%
- D. 35%

Q) A shopkeeper sells his articles at their cost price but uses a faulty balance which reads 1000g for 800g. What is his actual profit percentage ?

(a) 25%

(b) 20%

(c) 40%

(d) 30%

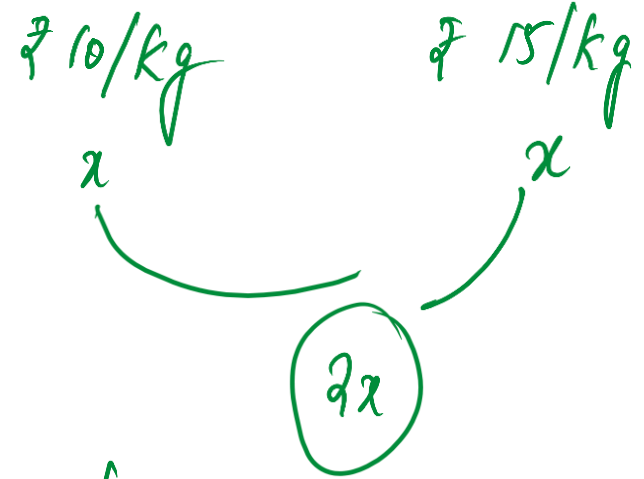
$$\frac{1000 - 800}{800} \times 100$$

$$\frac{200}{800} \times 100 = \underline{25\%}$$

Ans: (a)

Q) Two lots of onions with equal quantity, one costing ₹ 10 per kg and the other costing ₹15 per kg, are mixed together and whole lot is sold at ₹ 15 per kg. What is the profit or loss?

- (a) 10% loss (b) 10% profit
(c) 20% profit (d) 20% loss



Let x kg of onions be quantity for both parts.

$$CP = 10x + 15x = 25x$$

$$SP = 15(2x) = 30x$$

$SP > CP \rightarrow$ profit

$$\text{profit \%} = \frac{SP - CP}{CP} \times 100 = \frac{5x}{25x} \times 100 = 20\%$$

Q) Two lots of onions with equal quantity, one costing ₹ 10 per kg and the other costing ₹15 per kg, are mixed together and whole lot is sold at ₹ 15 per kg. What is the profit or loss?

- (a) 10% loss (b) 10% profit
(c) 20% profit (d) 20% loss

Ans: (c)

Q) A milk vendor bought 28 l of milk at the cost of ₹ 8.50 per l. After adding some water, he sold the mixture at the same price. If he gains 12.5%, how much water did he add?

- (a) 5.5 l (b) 4.5 l
(c) 3.5 l (d) 2.5 l

$$CP = 28 \times 8.5 \text{ l}$$

$$SP = (28+x) \times 8.5 \text{ l}$$

x litres of water is added,

$$12.5 = \frac{(28+x) 8.5 - 28 \times 8.5}{28 \times 8.5} \times 100$$

$$12.5 = \frac{x \times 8.5}{28 \times 8.5} \times 100 \quad \Bigg| \quad \frac{28 \times 12.5}{100} = x \quad \Bigg| \quad x = \frac{28}{8} = 3.5 \text{ litres}$$

$$\underbrace{(OR)}_{12.5} = \frac{(28+x) - 28}{28} \times 100$$

(As SP of 1 litre = CP of 1 litre)

$$\frac{12.5 \times 28}{100} = \underbrace{x}$$

Q) A milk vendor bought 28 l of milk at the cost of ₹ 8.50 per l. After adding some water, he sold the mixture at the same price. If he gains 12.5%, how much water did he add?

(a) 5.5 l

(b) 4.5 l

(c) 3.5 l

(d) 2.5 l

Ans: (c)

Q) Anu sold an article for ₹480 at some profit. Had she sold it for ₹400, then there would have been a loss equal to one-third of the initial profit. What was the cost price of the article?

- (a) ₹450 (b) ₹430 (c) ₹425 (d) ₹420

(CP)

SP — 480 ————— 400

CP
—————
(profit)

CP
—————
(Loss)

$$CP - 400 = \frac{1}{3} (480 - CP)$$

$$3CP - 1200 = 480 - CP$$

$$4CP = 1680$$

$$CP = \underline{\underline{420}}$$

Q) Anu sold an article for ₹480 at some profit. Had she sold it for ₹400, then there would have been a loss equal to one-third of the initial profit. What was the cost price of the article?

- (a) ₹450 (b) ₹430 (c) ₹425 (d) ₹420

Ans: (d)

Q) A man buys 4 tables and 5 chairs for ₹ 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of ₹ 120. What is the cost of one table?

(a) ₹ 200

(b) ₹ 220

(c) ₹ 240

(d) ₹ 260

$$\begin{aligned} \text{CP of 1 Table} &= \underline{\underline{₹ x}} \\ \text{" " 1 chair} &= ₹ y \end{aligned}$$

$$\text{CP} = 1000 = \underline{\underline{4x + 5y}}$$

$$\begin{aligned} \text{SP} &= (4x) \left(\frac{100 + 10}{100} \right) + 5y \left(\frac{100 + 20}{100} \right) = 4x \left(\frac{11}{10} \right) + 5y \left(\frac{6}{5} \right) \\ &= \frac{44x}{10} + \frac{30y}{5} = \frac{44x + 60y}{10} \end{aligned}$$

CDS & AFCAT 1 2025 LIVE CLASS - MATHS - PART 3

$$120 = SP - CP$$

Q) A man buys 4 tables and 5 chairs for ₹ 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of ₹ 120. What is the cost of one table?

- (a) ₹ 200 (b) ₹ 220
(c) ₹ 240 (d) ₹ 260

Ans: (a)

The cost price of 100 mangoes is equal to the selling price of 80 mangoes. What is the profit percentage ? (PYQ - 2021)

- A. 16 %
- B. 20 %
- C. 24 %
- D. 25%

$$CP \text{ of } 100 = SP \text{ of } 80$$

$$100 \times (CP \text{ for } 1 \text{ mango}) = 80 \times (SP \text{ of } 1 \text{ mango})$$

$$\frac{CP}{SP} = \frac{80}{100} = \frac{4}{5}$$

$$CP \text{ of } x \text{ articles} = SP \text{ of } y \text{ articles,}$$
$$\text{profit \%} = \left(\frac{x-y}{y} \times 100 \right) \%$$

$$\text{profit \%} = \frac{SP - CP}{CP} \times 100 = \frac{5-4}{4} \times 100 = \underline{25\%}$$

The cost price of 100 mangoes is equal to the selling price of 80 mangoes. What is the profit percentage ? (PYQ – 2021)

- A. 16 %
- B. 20 %
- C. 24 %
- D. 25%

Q) A trader marked a watch 40% above the cost price and then gave a discount of 10%. He made a net profit of ₹ 468 after paying a tax of 10% on the gross profit. What is the cost price of the watch?

(a) ₹ 1200

(b) ₹ 1800

(c) ₹ 2000 ✓

(d) ₹ 2340

$$\begin{aligned} \text{gross profit} &= SP - CP \\ &= \frac{126}{100} CP - CP = \frac{26}{100} CP \end{aligned}$$

CP

$$MP = CP \left(\frac{140}{100} \right) = \frac{7}{5} CP$$

$$\text{net profit} = \frac{26}{100} CP \left(\frac{9}{10} \right)$$

$$SP = \frac{7}{5} CP \left(\frac{90}{100} \right) = \left(\frac{126}{100} CP \right)$$

$$468 = \frac{234 CP}{1000}$$

$$CP = \frac{468 \times 1000}{234} = \underline{2000}$$

Q) One saree was purchased for ₹ 564 after getting a discount of 6% and another saree was purchased for ₹ 396 after getting a discount of 1%. Taking both the items as a single transaction, what is the percentage of discount?

(a) 3.5

(b) 4

(c) 7

(d) 7.5

Q) One saree was purchased for ₹ 564 after getting a discount of 6% and another saree was purchased for ₹ 396 after getting a discount of 1%. Taking both the items as a single transaction, what is the percentage of discount?

(a) 3.5

(b) 4

(c) 7

(d) 7.5

Ans: (b)

Q) An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage profit when it is sold at 60% of the original selling price?

- (a) 20 (b) 30 (c) $33\frac{1}{3}$ (d) $17\frac{1}{3}$

Q) An article is sold at a certain price. If it is sold at $33\frac{1}{3}\%$ of this price, there is a loss of $33\frac{1}{3}\%$. What is the percentage profit when it is sold at 60% of the original selling price?

- (a) 20 (b) 30 (c) $33\frac{1}{3}$ (d) $17\frac{1}{3}$

Ans: (a)

Q) A cloth merchant buys cloth from a weaver and cheats him by using a scale which is 10 cm longer than a normal metre scale. He claims to sell cloth at the cost price to his customers, but while selling uses a scale which is 10 cm shorter than a normal metre scale. What is his gains?

(a) 20%

(b) 21%

(c) $22\frac{2}{9}\%$

(d) $23\frac{1}{3}\%$

Q) A cloth merchant buys cloth from a weaver and cheats him by using a scale which is 10 cm longer than a normal metre scale. He claims to sell cloth at the cost price to his customers, but while selling uses a scale which is 10 cm shorter than a normal metre scale. What is his gains?

(a) 20%

(b) 21%

(c) $22\frac{2}{9}\%$

(d) $23\frac{1}{3}\%$

Ans: (c)

A person bought a chair and a table for ₹ 750. He sold the chair at a gain of 5% and the table at a gain of 20%. He gained 16% on the whole. What is original cost of table ?
(PYQ - 2021)

A. ₹ 400

B. ₹ 450

C. ₹ 550 ✓

D. ₹ 600

$$\text{cost of chair} = ₹ (750 - x)$$

₹ x

$$CP = 750$$

$$SP = (750 - x) \left(\frac{105}{100} \right) + x \left(\frac{120}{100} \right)$$

$$= (750 - x) \left(\frac{21}{20} \right) + x \left(\frac{24}{20} \right)$$

$$= \frac{75 \times 21}{2} - \frac{21x}{20} + \frac{24x}{20} = \frac{1575}{2} + \frac{3x}{20}$$

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$$\frac{\frac{1575}{2} + \frac{3x}{20} - 750}{750} \times 100 = 16$$

$$\frac{787.5 + \frac{3x}{20} - 750}{750} = \frac{\frac{8}{16} \times \frac{15}{750}}{\frac{100}{2}} = 120$$

$$\frac{3x}{20} + 37.5 = 120$$

$$x = (120 - 37.5) \times \frac{20}{3} = \frac{27.5}{3} \times \frac{20}{3} = 27.5 \times 2 \times 10 = 275 \times 2 = 550$$

**A person bought a chair and a table for ₹ 750. He sold the chair at a gain of 5% and the table at a gain of 20%. He gained 16% on the whole. What is original cost of table ?
(PYQ – 2021)**

- A. ₹ 400
- B. ₹ 450
- C. ₹ 550**
- D. ₹ 600

Q)By giving 25% discount a trader earns 25% profit. If he sells the item at 10% discount, what is his profit?

(a) 10%

(b) 40%

(c) 45%

(d) 50%

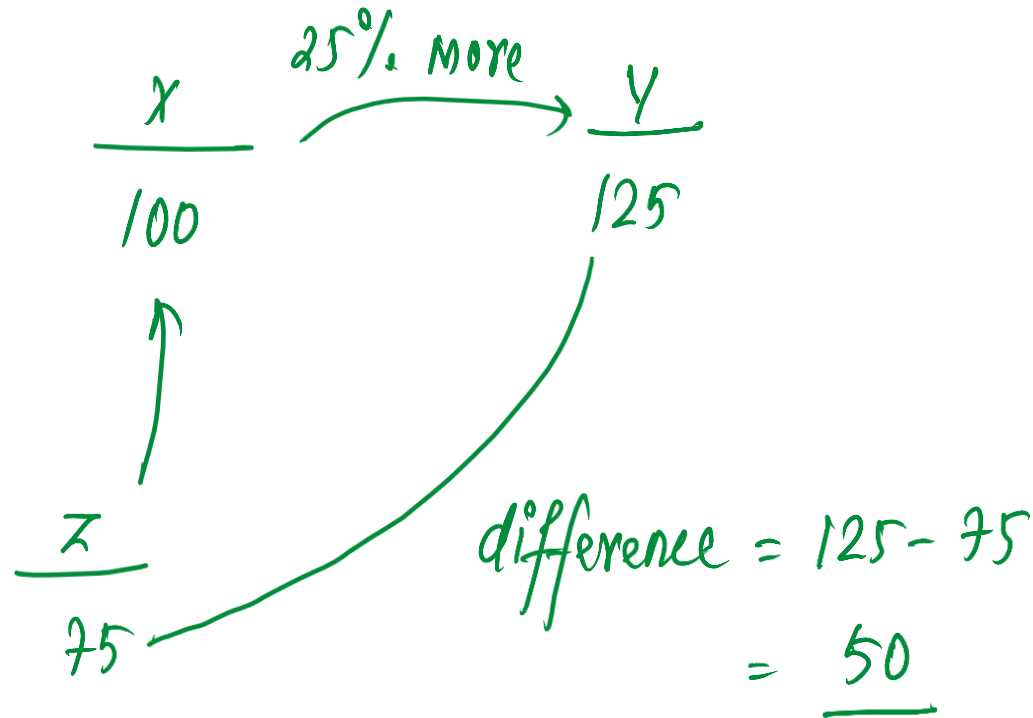
Q)By giving 25% discount a trader earns 25% profit. If he sells the item at 10% discount, what is his profit?

- | | |
|---------|---------|
| (a) 10% | (b) 40% |
| (c) 45% | (d) 50% |

Ans: (d)

X sells his goods 25% cheaper than Y and 25% dearer than Z. How much percentage is Z's goods cheaper than Y? (PYQ - 2021)

- A. $(100/3) \%$
- B. 40 %
- C. 50 %
- D. $(200/3) \%$



$$\frac{\text{difference}}{Y's \text{ price}} \times 100$$

$$\frac{50}{125} \times 100$$

$$= \underline{40\%}$$

X sells his goods 25% cheaper than Y and 25% dearer than Z. How much percentage is Z's goods cheaper than Y ? (PYQ – 2021)

A. $(100/3)$ %

B. 40 %

C. 50 %

D. $(200/3)$ %

- Q) A man bought 500 metres of electronic wire at 50 paise per metre. He sold 50% of it at a profit of 5%. At what percent should he sell the remainder so as to gain 10% on the whole transaction?
- (a) 13% (b) 12.5% (c) 15% (d) 20%

- Q) A man bought 500 metres of electronic wire at 50 paise per metre. He sold 50% of it at a profit of 5%. At what percent should he sell the remainder so as to gain 10% on the whole transaction?
- (a) 13% (b) 12.5% (c) 15% (d) 20%

Ans: (c)

Q) A shopkeeper gets a loss of $28\frac{4}{7}\%$ on CP, find percentage loss on SP.

(a) 30%

(b) $\frac{200\%}{3}$

(c) 40%

(d) None of these

Q) A shopkeeper gets a loss of $28\frac{4}{7}\%$ on CP, find percentage loss on SP.

(a) 30%

(b) $\frac{200\%}{3}$

(c) 40%

(d) None of these

Ans: (c)

Q) Five kg of butter was bought by a shopkeeper for ₹ 300. One kg becomes unsaleable. He sells the remaining in such a way that on the whole he incurs a loss of 10%. At what price per kg was the butter sold?

- (a) ₹ 67.50 (b) ₹ 52.50 (c) ₹ 60 (d) ₹ 72.50

Q) Five kg of butter was bought by a shopkeeper for ₹ 300. One kg becomes unsaleable. He sells the remaining in such a way that on the whole he incurs a loss of 10%. At what price per kg was the butter sold?

- (a) ₹ 67.50 (b) ₹ 52.50 (c) ₹ 60 (d) ₹ 72.50

Ans: (a)

- Q)** A shopkeeper allows 10% discount on goods when he sells without credit. Cost price of his goods is 80% of his selling price. If he sells his goods by cash, then his profit is
- (a) 50% (b) 70% (c) 25% (d) 40%

- Q)** A shopkeeper allows 10% discount on goods when he sells without credit. Cost price of his goods is 80% of his selling price. If he sells his goods by cash, then his profit is
- (a) 50% (b) 70% (c) 25% (d) 40%

Ans: (c)

A trader sells two computers at the same price, making a profit of 30 % on one and a loss of 30 % on the other. What is the net loss or profit % on the transaction ?

(PYQ - 2019)

- A. 6 % loss
- B. 6 % gain
- C. 9 % loss
- D. 9 % gain

$$\left(\pm a \pm b \pm \frac{ab}{100} \right) \%$$

when two items with same sp.

$$\left(30 - 30 - \frac{900}{100} \right) \%$$

$$-9\% \Rightarrow \underline{9\% \text{ loss}}$$

**A trader sells two computers at the same price, making a profit of 30 % on one and a loss of 30 % on the other. What is the net loss or profit % on the transaction ?
(PYQ – 2019)**

- A. 6 % loss
- B. 6 % gain
- C. 9 % loss**
- D. 9 % gain

A person sells two items each at ₹ 990 , making a profit of 10 % on one and a loss of 10 % on the other. What is the combined % of profit or loss for the two items ?
(PYQ - 2019)

- A. 1 % loss
- B. 1 % profit
- C. No Profit No Loss
- D. 0.5% Profit

$$\left[+10 - 10 + \frac{(+10)(-10)}{100} \right] \%$$

$$\left(\frac{-x^2}{100} \right) \%$$

$$\frac{-1\%}{\text{(loss of 1\%)}}$$

**A person sells two items each at ₹ 990 , making a profit of 10 % on one and a loss of 10 % on the other. What is the combined % of profit or loss for the two items ?
(PYQ – 2019)**

- A. 1 % loss**
- B. 1 % profit**
- C. No Profit No Loss**
- D. 0.5% Profit**

Q) A dealer of scientific instruments allows 20% discount on the marked price of the instruments and still makes a profit of 25%. If his gain over the sale of an instrument is ₹ 150, find the marked price of the instrument.

- (a) ₹ 938.50 (b) ₹ 940
(c) ₹ 938 (d) ₹ 937.50

Q) A dealer of scientific instruments allows 20% discount on the marked price of the instruments and still makes a profit of 25%. If his gain over the sale of an instrument is ₹ 150, find the marked price of the instrument.

- (a) ₹ 938.50 (b) ₹ 940
(c) ₹ 938 (d) ₹ 937.50

Ans: (a)

Q) A shopkeeper buys a product of ₹ 150 per kg. 15% of product was damaged. At what price (per kg) should he sell the remaining so as to earn a profit of 20%?

(a) ₹ $205\frac{13}{17}$

(b) ₹ $207\frac{13}{17}$

(c) ₹ $209\frac{13}{17}$

(d) ₹ $211\frac{13}{17}$

Q) A shopkeeper buys a product of ₹ 150 per kg. 15% of product was damaged. At what price (per kg) should he sell the remaining so as to earn a profit of 20%?

(a) ₹ $205\frac{13}{17}$

(b) ₹ $207\frac{13}{17}$

(c) ₹ $209\frac{13}{17}$

(d) ₹ $211\frac{13}{17}$

Ans: (d)

Q) A sells an article which costs him ₹ 400 to B at a profit of 20%. B then sells it to C, making a profit of 10% on the price he paid to A. How much does C pay to B?

- (a) ₹ 472 (b) ₹ 476 (c) ₹ 528 (d) ₹ 532

- Q) A sells an article which costs him ₹ 400 to B at a profit of 20%. B then sells it to C, making a profit of 10% on the price he paid to A. How much does C pay to B?
- (a) ₹ 472 (b) ₹ 476 (c) ₹ 528 (d) ₹ 532

Ans: (c)

CDS-AFCAT 1 2025

SSBCrack
EXAMS

LIVE

MATHS

SIMPLE &
COMPOUND INTEREST

CLASS 1



NAVJYOTI SIR