

tcs | NQT 2026
NATIONAL QUALIFIER TEST

APTITUDE 05

**PROFIT , LOSS
& DISCOUNT**



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Note C.P. \rightarrow Cost price / S.P. \rightarrow selling price / M.P. \rightarrow Mark price.

i) Profit \rightarrow when C.P. < S.P

$$P = S.P - C.P$$

ii) Loss \rightarrow when C.P. > S.P

$$L = C.P - S.P$$

iii) if C.P. = S.P

No profit No Loss

(iv) Profit % = $\frac{P}{C.P} \times 100$ ✓

(v) Loss % = $\frac{L}{C.P} \times 100$ ✓

(vi) Margin % \rightarrow $\frac{P}{S.P} \times 100$

$$(VI) \text{ Discount} \Rightarrow \frac{M.P - S.P}{M.P}$$

$$(VII) \text{ Discount \%} \Rightarrow \frac{\text{Discount}}{M.P} \times 100 \checkmark$$

**

$$\frac{M.P}{C.P} = \frac{100 + P\%}{100 - D\%}$$

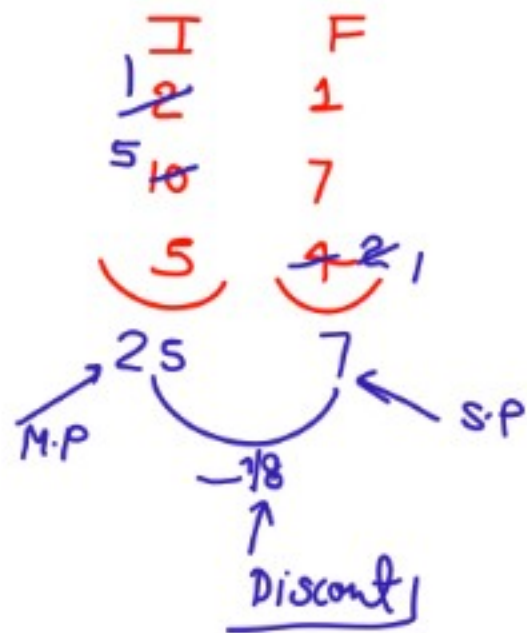
P% \rightarrow profit

D% \rightarrow Discount

✓

Successive Discount: →

Case-I 50%, 30% and 20% Discount: →



$$50\% = \frac{-1}{2} \rightarrow 1$$

$$30\% = \frac{-3}{10} \rightarrow 7$$

$$20\% = \frac{-1}{5} \rightarrow 4$$

equivalent
D% = $\frac{18}{25} \times 100$
→ 72%

10000 Rs
↓ 72%

2800 ✓ Rs ✓

Case-II

Buy 3 article and get 2 free :->

$14\frac{2}{7}\%$

$$D\% = \frac{\text{No. of free articles}}{\text{Total No. of articles}} \times 100$$

$$D\% = \frac{2}{[3+2]} \times 100 = \frac{2}{5} \times 100 = \underline{40\%}$$

Q) Buy 4 articles and get 3 free :->

$$\text{Final } D\% \Rightarrow \frac{3}{[4+3]} \times 100 = \frac{3}{7} \times 100 \Rightarrow 42\frac{6}{7}\%$$

1. There is a loss of 7% on selling an article for Rs. 651. The cost price of that article is

(a) 791

(b) 710

(c) 700

(d) 800

$$\text{Loss \%} \Rightarrow 7\% \Rightarrow \frac{7}{100} \times \text{C.P.} = \text{S.P.} - \text{C.P.}$$

Loss → 7
C.P. → 100
S.P. → 93

$$\text{S.P.} \rightarrow 93 \rightarrow 651 \text{ Rs}$$

$$1 \rightarrow \frac{651}{93} \rightarrow 7$$

$$\text{C.P.} \rightarrow 7 \rightarrow 7 \times 100 = 700 \text{ Rs}$$

3. By selling a tape recorder for Rs. 300, I make a loss of $16\frac{2}{3}\%$. What is the percentage profit on selling it for Rs. 400?

(a) $9\frac{1}{11}\%$

(b) $16\frac{2}{3}\%$

(c) $11\frac{1}{9}\%$

(d) 10%

Case-I $(S.P)_I = 300 \text{ Rs}$ ✓

Loss $16\frac{2}{3}\% \Rightarrow \frac{16\frac{2}{3}}{100} \times 300 = 50$ ← S.P
 $\frac{16\frac{2}{3}}{100} \times 300 = \frac{16 \times 300 + 2 \times 200}{3 \times 100} = \frac{4800 + 400}{300} = \frac{5200}{300} = \frac{52}{3} = 17\frac{1}{3}$
 $300 - 50 = 250$ ← C.P

5 → 300

1 → 60 ✓

6 → $6 \times 60 = 360 \text{ Rs}$ ← C.P ✓

Case-II $C.P = 360 \text{ Rs}$, $S.P = 400 \text{ Rs}$

$P \Rightarrow 400 - 360 = 40 \text{ Rs}$

$P\% \Rightarrow \frac{40}{360} \times 100 = \frac{100}{9}$

$\Rightarrow 11\frac{1}{9}\%$ ✓

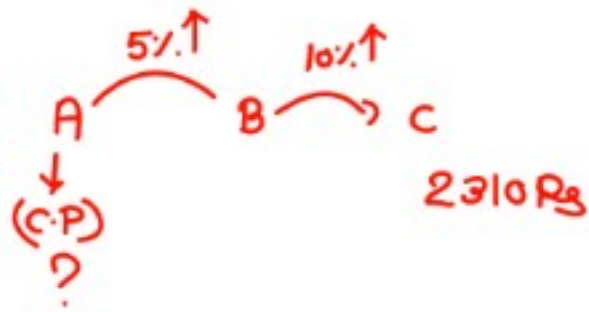
4. A sells a cycle to B at 5% profit. B sells the same cycle to C at 10% profit. If C has given Rs. 2310 for the cycle, then the cost price of A will be.

(a) 1980

(b) 2070

(c) 2000

(d) 2080

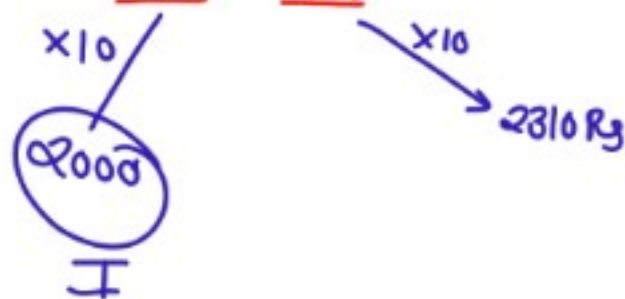


$$\uparrow 5\% \Rightarrow \frac{+1}{20} \times 21$$

$$\uparrow 10\% = \frac{+1}{10} \times 11$$

I	F
20	21

10	11
<u>200</u>	<u>231</u>



5. The cost price of 15 articles is equal to the selling price of 10 articles. What will be the profit percentage?

(a) 46%

(b) 47%

(c) 50%

(d) 52%

$$15 \times \text{C.P} = 10 \times \text{S.P}$$

$$\frac{\text{C.P}}{\text{S.P}} = \frac{10}{15} = \frac{2}{3} \quad] +1 P$$

$$P\% = \frac{1}{2} \times 100 = \underline{50\%}$$

C.P of an article \rightarrow C.P
S.P of an article \rightarrow S.P

10. A person buys 8 oranges for Rs. 15 and sells 10 oranges for Rs. 18, then what will be his profit or loss percentage? $\frac{C.P.}{S.P.}$

- (a) 9% loss
- (b) 4% loss
- (c) 4% profit
- (d) None of these

LCM [8, 10]
↳ 40

S.P

$$\begin{array}{l} 8 \text{ oranges} \longrightarrow 15 \text{ Rs} \\ \quad \times 5 \\ \quad \downarrow \\ \quad \text{40} \\ \\ 10 \text{ oranges} \longrightarrow 18 \text{ Rs} \\ \quad \times 4 \\ \quad \downarrow \\ \quad \text{40} \end{array}$$

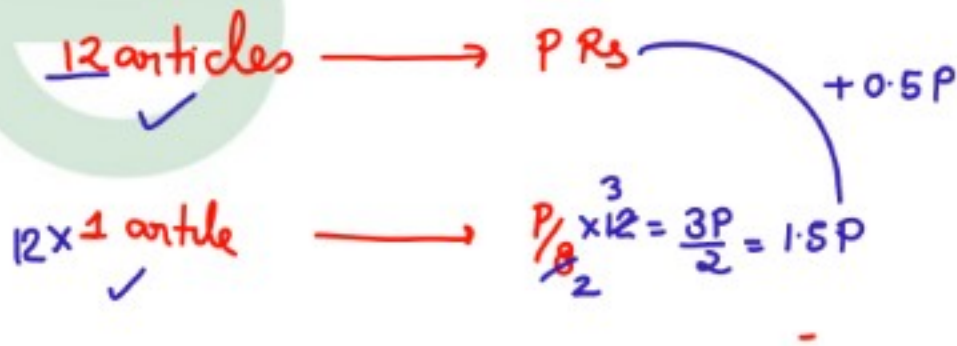
$75 \checkmark$
 72
- 3 loss

$$\text{Loss\%} = \frac{3}{75} \times 100 \Rightarrow 4\% \text{ Loss}$$

12. A man buys some articles at the rate of Rs. P per dozen and sells them at the rate of Rs. $\frac{P}{8}$ per article, his profit

percentage is

- (a) 70%
- (b) 50%
- (c) 45%
- (d) 30%



13. A person buys 100 cups at Rs. 10 per cup. On the way his 10 cups are broken. He sold the remaining cups at the rate of Rs. 11 per cup, then find his loss percentage.

- (a) 1%
- (b) 0.01%
- (c) 0.001%
- (d) 2%

$$(C.P)_{Total} = 10 \times 100 = 1000 \text{ Rs}$$

$$(S.P)_{Total} \Rightarrow 90 \times 11 + 10 \times 0$$

$$\Rightarrow 990 \text{ Rs}$$

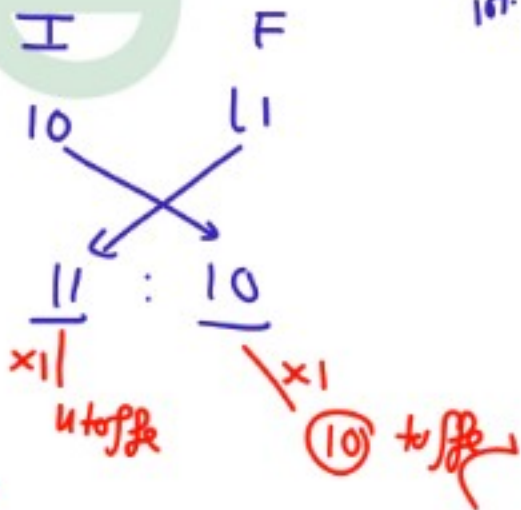
Loss
↓
10 Rs

$$\text{Loss} = \frac{10}{1000} \times 100 \Rightarrow \underline{1\%}$$

14. A man buys 11 toffees for Rs. 1 how many toffees he sells for Rs. 1 so that he makes a profit of 10%.

- (a) 18
- (b) 10
- (c) 22
- (d) 17

Unit Price
↓
Quantity



$P \propto \text{unit price}$
 $Q \propto \text{Quantity}$
 $107 \therefore \frac{1}{10} = \frac{11}{10}$

$$\text{Amount I} = \text{Amount II}$$

$$P_I \times Q_I = P_{II} \times Q_{II}$$

$$\frac{P_I}{P_{II}} = \frac{Q_{II}}{Q_I}$$

Q) If a man buys 56 egg at price 90.75 Rs, how many eggs he have sell for 90.75 Rs to earn profit of $14\frac{2}{7}\%$.

Solⁿ)

	I	F
Unit price	7	8
Quantity	8	7

\swarrow $\times 7$ → 56 egg
 \searrow $\times 7$ → (49) eggs

$$14\frac{2}{7}\% = \frac{1}{7} \times 8$$

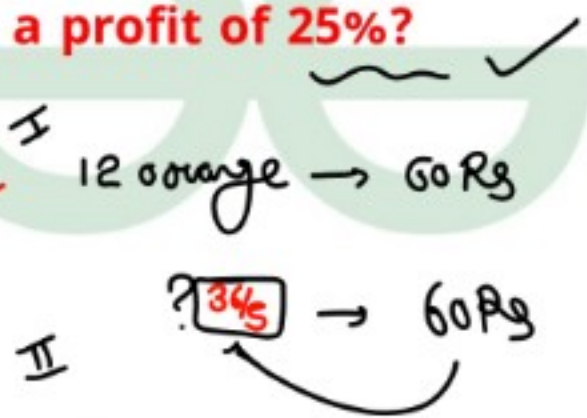
15. By selling 12 oranges for Rs. 60 a person incurs a loss of 25%. How many oranges should he sell for Rs. 100 to make a profit of 25%?

(a) 13

(b) 16

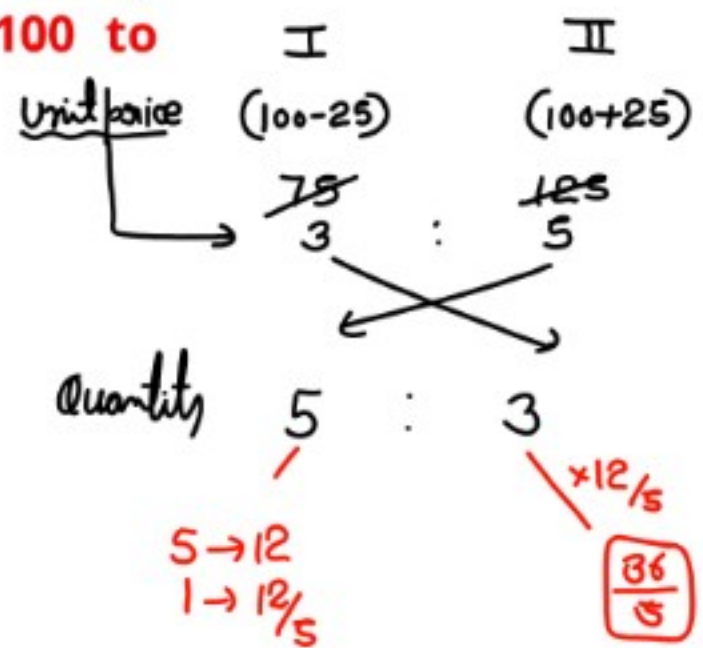
~~(c) 12~~

(d) 11



60 Rs $\rightarrow \frac{36}{5}$
 1 Rs $\rightarrow \frac{\frac{36}{5}}{5 \times 60} \Rightarrow \frac{3}{25}$
 100 Rs $\rightarrow \frac{3}{25} \times 100 = 12$

let (C.P)_{unit} \Rightarrow 100



$$\begin{array}{l} \frac{75}{3} \quad \frac{125}{5} \\ \textcircled{5} : \textcircled{3} \\ \begin{array}{l} 5 \rightarrow 12 \\ 1 \rightarrow 1\frac{2}{5} \\ 3 \rightarrow \textcircled{\frac{36}{5}} \end{array} \\ \text{Box} \rightarrow \end{array} \rightarrow \frac{36/5}{60} \times 100 \Rightarrow \textcircled{22} A$$

29. $\frac{2}{3}$ part of an article is sold at 30% profit, $\frac{1}{4}$ part at 16% profit and remaining part at 12% profit. If there is a total profit of Rs. 75 on it, then what will be the cost price of the article?

- (a) 400
(b) 600
~~(c) 300~~
(d) 700

$$\frac{2 \times 4}{3 \times 4} = \frac{8}{12}$$

8 part \rightarrow 30% \uparrow

$$\frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

3 part \rightarrow 16% \uparrow

1 part \rightarrow 12%

$$\text{Avg.} = \frac{x_1 f_1 + x_2 f_2 + \dots + x_n f_n}{f_1 + f_2 + \dots + f_n}$$

$x \leftarrow$ observation

$f \rightarrow$ frequency

$$\text{Avg. \%} \Rightarrow \frac{8 \times 30 + 3 \times 16 + 1 \times 12}{8 + 3 + 1}$$

$$\Rightarrow \frac{240 + 48 + 12}{12} \Rightarrow \frac{300}{12} = 25\%$$

$$\frac{1 \rightarrow 75}{7 \times 75 \rightarrow 300}$$

$$7 \times 75 \rightarrow 300$$

$$25\% \rightarrow 75 \text{ Rs}$$

$$1\% \rightarrow 3 \text{ Rs}$$

$$\text{C.P} \rightarrow 100\% \rightarrow 3 \times 100 = 300 \text{ Rs}$$

$\frac{4}{6}$ $\frac{2 \times 2}{2 \times 3}$ part of an article is sold at a loss of 15%, $\frac{1}{6}$ parts at a loss of 12% and the remaining part at a loss of 18%, if the total loss is Rs. 45, then what

will be the cost of the article?

- (a) 200
- (b) 400
- (c) 500
- (d) 300

$$\frac{2}{6} \times 5 + \frac{2}{6} + \frac{3}{6}$$
$$\frac{1 \times (-15) + 1 \times (-12) + 1 \times (-18)}{6}$$

$$15\% \rightarrow 45 \text{ Rs}$$

$$1\% \rightarrow 3$$

$$\text{C.P } 100\% \rightarrow 3 \times 100 = 300 \text{ Rs}$$

$$\text{(-15\%)} \checkmark$$

31. A distributor buys some books from a publisher for Rs. 8000, he sells $\frac{1}{4}$ part at a loss of 20%. At what percent profit should he sell the remaining stock so that he neither profits nor loss on the total.

(a) 12%

(b) 15%

(c) 9%

(d) $6\frac{2}{3}\%$

Avg profit

$$0 = \frac{1 \times (-20) + 3 \times P}{4}$$

$$0 = -20 + 3P$$

$$3P = 20$$

$$P = 6\frac{2}{3}\%$$

33. A person buys some wheat for Rs. 4800.

He sells $\frac{5}{7}$ part of wheat at a profit of 14%, at what percent loss should he sell the remaining part so that he neither profits nor loss on the total?

(a) 40%

(b) 65%

(c) 35%

(d) 70%

Try Yourself

57. A merchant bought a gift box for Rs. 150. What should be the marked price of the gift box so that even after giving a discount of 10% it can make a profit of 10%?

$$\left[\frac{MP}{CP} = \frac{100 + P\%}{100 - D\%} \right]$$

~~(a) 180~~

~~(b) 183.3~~

(c) 186.6

~~(d) 190~~

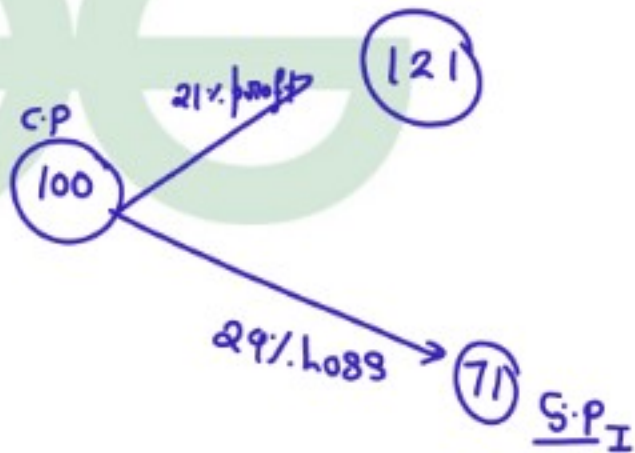
$$\frac{MP}{150} = \frac{100 + 10}{100 - 10}$$

$$MP = \frac{110}{90} \times 150 \Rightarrow \frac{550}{3} \Rightarrow 183.3 \checkmark$$

62. When an article is sold for Rs. 355, there is a loss of 29%. For how much should the same article be sold to profit 21%?

- (a) 605
(b) 629.20
(c) 635
(d) 580.80

let C.P = 100 ✓



$$71 \rightarrow 355 \text{ Rs}$$
$$1 \rightarrow \frac{355}{71} = 5 \text{ Rs}$$

$$121 \rightarrow 121 \times 5 \rightarrow \underline{605 \text{ Rs}}$$



**PROFIT, LOSS &
DISCOUNT**

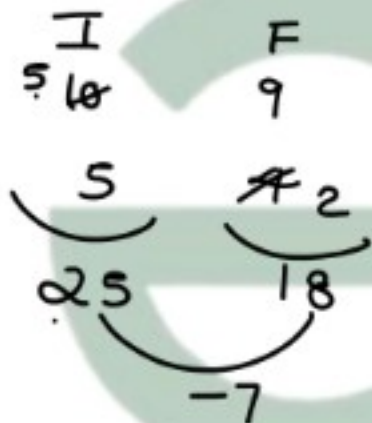
Q.

A shopkeeper gives 2 successive discounts of 10% and 20% on MRP. Effective discount is %.

[TCS NET PYQ]

$$10\% = \frac{-1}{10} > 9$$

$$20\% = \frac{-2}{10} > 4$$



$$\text{effective D}\% = \frac{7}{25} \times 100 = 28\%$$

(II) if MRP \Rightarrow 500 Rs
then S.P = ?

$$\text{MRP} \rightarrow 25 \rightarrow 500 \text{ Rs}$$

$$1 \rightarrow 20 \text{ Rs}$$

$$\text{S.P } 18 \rightarrow 20 \times 18 \rightarrow 360 \text{ Rs}$$

Q.

A lady bought two sarees of Rs. 2000 each. She sold one at a loss of 10% and the other at a profit after offering a discount of 5%. She incurred an overall loss of 3.7%. What percentage above the cost price was the marked price of the second saree?

- a) 4
- b) 8
- c) 3.2
- d) 3.6



Q.

A shopkeeper incurs a loss of Rs. 90 if he marked up the price of an article by 10% and offered $x\%$ discount. He gains Rs. 70 on the same article if he exchanges the marked price with discount percent. Find the value of x ?

- a) 50
- b) 25
- c) 60
- d) 40



Q.

The expenditure of Rashmi is equal to 225% of her savings. If her income increases by 20% and the expenditure increases by 40%, then her savings will

- a) Decrease by 25%
- b) Decrease by 20%
- c) Increase by 25%
- d) Increase by $33 \frac{1}{3}\%$



Q.

A business lady bought 400 handbags. She sold 100 of them at a profit of 20% and the rest at 10% profit. Find the overall profit percentage.

- a) 12.5%
- b) 16.75%
- c) 19.75%
- d) 11.25%



Q.

An electronics item dealer can earn a profit of 5%, even after allowing a 30% discount. He wanted to clear his old stock, so he offered a scheme of three successive discounts of 12%. What could be his minimum profit % approximately?

- a) 2
- b) 4
- c) 1
- d) 3

Try yourself
D x ~ D ✓

Q.

Adil shared 40% of his marbles with Banti and 50% of the remaining with Banti and Babli equally distributed 20% of his marbles between Adil and Babli and is labeled price, 16 marbles. How many Marbles did Adil have originally?

- a) 125
- b) 101
- c) 50
- d) 150



Q.

A trader buys 120 m cloth at Rs 125 per metre. He sells 40% of it at a gain of 15%. At what percent should he sell the remaining cloth so as to gain 25% in the entire transaction?

- a) $42 \frac{2}{3}$
- b) 30
- c) $28 \frac{1}{3}$
- d) 45



Q.

An electronics item dealer can earn a profit of 5%, even after allowing a 30% discount. He wanted to clear his old stock, so he offered a scheme of three successive discounts of 12%. What could be his minimum profit % approximately?

- a) 2
- b) 4
- c) 1
- d) 3



Q.

Boy scored 90 marks in his mid-term exam and 105 in his end-term exam. If the maximum marks in both the examinations are 150, then find the increase in his marks in percentage points.

- a) 10%
- b) 15%
- c) 14.28%
- d) 16.66%



Q.

The cost price of an article is Rs. X . Ambuj marks a new price on it and after allowing a discount of 20% on the newly marked price, he sells it for Rs. $1.2X$. He sells a second article whose marked price is twice the marked price of the first article, at a discount of 50%. Find the ratio of the selling price of first article to the second article.

- a) 4:5
- b) 5:3
- c) 3:5
- d) 2:3



Q.

The price of a commodity is reduced by 40% but its consumption is increased by 35%. What percent of the consumption should be increased so as to keep the same expenditure as before? (correct to one decimal place)

- a) 24.2
- b) 15.4
- c) 18.5
- d) 23.5



Q.

Selling an item at $\frac{5}{6}$ th of its marked price results in a loss of 10%. What is the % of profit/loss, if a discount of 5% is offered on the marked price?

- a) 2.6% loss
- b) 2.6% profit
- c) 3% profit
- d) 3% loss



Q.

If 20% apples from a cart are rotten and the remaining apples are sold at 20% discount, the seller gets 92% profit on the cost price of the whole cart. By what percent above the cost price has the seller marked up the apples?

- a) 180%
- b) 250%
- c) 200%
- d) 280%





THANK YOU