

# Successive discount

## Concept Lecture – 4

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Find the selling price of an article if a shopkeeper allows two successive discounts of 20% each on the marked price of **Rs.800.**

यदि एक दुकानदार 800 रु के अंकित मूल्य वाली किसी वस्तु पर 20% के दो क्रमिक छूट देता है, तो वस्तु का विक्रय मूल्य का पता लगाएं।

$$800 \times \frac{4}{5} \times \frac{4}{5} = 512$$

- a) Rs.512                      b) Rs.480  
c) Rs.640                      c) Rs.722

$$= 20 + 20 - \frac{20 \times 20}{100}$$
$$= 36\%$$

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$$1000 \times \frac{9}{10} \times \frac{9}{10} \times \frac{4}{5} = 648$$

A shopkeeper offers two discounts of 10% along with a discount of 20% on a book listed at Rs.1000. At what price a customer would get it?

1000 रूपए अंकित मूल्य वाली पुस्तक पर एक दुकानदार दो 10% के बट्टों के अतिरिक्त एक 20% का बट्टा भी देता है। तो वह पुस्तक एक ग्राहक को कितने में पड़ेगी?

a) Rs. 882

b) Rs.352

c) Rs.742

**(c) Rs.648**

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$$MP \times \frac{9}{10} \times \frac{4}{5} \times \frac{7}{10} = \frac{252}{1}$$

$$MP = 500$$

After three discounts of respectively 10%, 20% and 30% a person bought a fan in **Rs.252**. Find the marked price of the fan.

एक आदमी ने क्रमशः 10%, 20% और 30% के तीन बट्टों के बाद 252 रूपए में एक पंखा खरीदा। पंखे का अंकित मूल्य ज्ञात कीजिए।

a) Rs.400

b) Rs.500

c) Rs.550

c) Rs.600

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$$30 - 2 = 28\%$$

$$-a - b + \frac{a \times b}{100}$$

Successive discounts of 10% and 20% are equivalent to a single discount of:

10% और 20% की क्रमिक छूट, कितने % एकल छूट के बराबर है:

- a) 15%                      b) 28%  
c) 30%                      d) 32%

$$a + b - \frac{a \times b}{100}$$

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$$\begin{array}{l} 35\% \\ 36\% \end{array} \left. \vphantom{\begin{array}{l} 35\% \\ 36\% \end{array}} \right\} 1\% = 22$$
$$100\% = 2200$$

The difference between a discount of 35% and two successive discounts of 20% and 20% on a certain bill was Rs.22. The amount of the bill is:

एक निश्चित बिल पर 35% की छूट और 20% - 20% के दो क्रमिक छूट के बीच का अंतर रु 22 था। बिल की राशि क्या है

- a) Rs.2000                      b) Rs.1100  
c) Rs.2200                      d) Data inadequate

$$36 = \frac{20 + 20 - \frac{20 \times 20}{100}}{100}$$

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-30%, -20%, -10%

- ① Value assume
- ② formula

$$\frac{-30 - 20 - 10 + \frac{600 + 200 + 300}{100}}$$

$$= -60 + 11 - .6$$

$$= \textcircled{-49.6\%}$$

A single discount equivalent to successive discounts of 30%, 20% and 10% is:

**30%, 20% और 10%** के क्रमिक छूट के बराबर एकल छूट है:

- a) 60%                      b) 50.4%  
c) 49.4%                    d) **49.6%**

~~$$\frac{30 \times 20 \times 10}{10000}$$~~

The successive discounts 18%, 10% and 15% are equivalent to a single discount of:

18%, 10% और 15% की क्रमागत छूट,----- की एकल छूट के समतुल्य हैं।

a) 39.25%

b) 37.27%

c) ~~45.16%~~

d) 41.32%

37.17%

$$43 - \frac{600}{100} = 37\%$$

$$\begin{array}{r} 180 \\ 150 \\ +270 \\ \hline 600 \end{array}$$

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What is a single discount (to the nearest whole number) equivalent to the successive discounts of 10%, 17% and 25%?

10%, 17% और 25% के क्रमिक छूट के समतुल्य एकल छूट (निकटतम पूर्ण संख्या तक) क्या होगा?

- a) 52%      b) 44%      c) 45%      d) 43%

Handwritten calculations showing the step-by-step reduction of 100 to 43.975% through successive discounts of 17% and 20.75%:

$$\begin{array}{r} 100 \\ -17 \\ \hline 83 \\ -20.75 \\ \hline 62.25 \end{array}$$
$$\begin{array}{r} 37.75 \\ 6.225 \\ \hline 43.975\% \end{array}$$

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$$\begin{array}{r} 120 > 300 \\ 180 > \\ \hline 96 \\ \hline 396 \end{array}$$

$$35 - 3.96 \\ = 31.04\%$$

A single discount equivalent to three successive discounts of 8%, 15% and 12% is: 8% 15% और 12% की तीन क्रमगत छुट के समतुल्य एकल छुट ज्ञात करें।

- a) 17.5%                      b) 68.816%  
c) 35%                         d) 31.184%

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8 6  
4 3

$$\begin{array}{r} 100 \\ -14 \\ \hline 86 \\ -12.9 \\ \hline 73.1 \end{array}$$

.731

A single discount equivalent to three successive discounts of 6%, 15% and 14% is:  
6%, 15% और 14% की तीन क्रमागत छुट के समतुल्य एकल छुट ज्ञात करें।

- a) 17.5%
- b) 31.286%
- c) 68.714%
- d) 34.357%

III

II

I

$$\begin{array}{r} 26.9 \\ 4.386 \\ \hline 31.286 \end{array}$$

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$$\textcircled{1} \quad \cancel{25+15} - \frac{\cancel{25} \times \cancel{15}}{\cancel{100}} = 375$$

$$\textcircled{2} \quad \cancel{30+10} - \frac{\cancel{30} \times \cancel{10}}{\cancel{100}} = 300$$

$$\textcircled{3} \quad \cancel{35+5} - \frac{\cancel{35} \times \cancel{5}}{\cancel{100}} = 175$$

तीसरी

A company offers three types of successive discounts.

1st: 25% and 15%;

2nd: 30% and 10%;

3rd: 35% and 5%.

Which offer is better for a customer?

एक कंपनी तीन प्रकार की क्रमिक छूट देती है।

पहली: 25% और 15%;

दूसरी: 30% और 10%;

तीसरी: 35% और 5%।

ग्राहक के लिए कौन सा ऑफ़र बेहतर है?

a) 1st

b) 2nd

c) 3rd

d) All are equal

$$a+b - \frac{a \times b}{100}$$

$$\textcircled{10} \quad 5 \times 5 = 25$$
$$1 \times 9 = 9$$

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Discount Diff

बड़ा बड़ा

छोटा छोटा

A retailer offers the following discount scheme for buyers on an article.

I. Two successive discounts of 10%. 10/

II. A discount of 12% follows by a discount of 8%.

III. Successive discounts of 15% and 5%.

IV. A discount of 20% 0%.

The selling price will be minimum under the scheme

एक दुकानदार किसी वस्तु पर ग्राहकों के लिए निम्न प्रकार की छूटें देता है।

I. 10% के दो क्रमिक छूटें।

II 8% छूट के बाद एक 12% छूट।

III 15% और 5% की दो क्रमिक छूटें।

IV 20% की एकमात्र छूट।

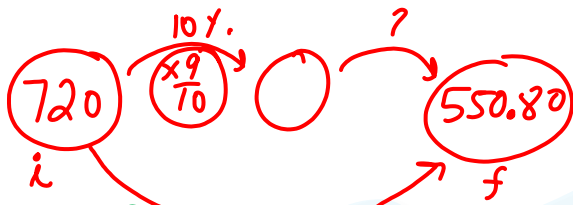
किस छूट के तहत सबसे कम विक्री मूल्य होगा?

a) I

b) II

c) III

d) IV



$$\begin{array}{r}
 6817 \\
 \underline{612} \\
 550.8 \times 10 \\
 \hline
 720 \times 9 \\
 \underline{8} \\
 2
 \end{array}
 = \frac{17}{20} \uparrow -3$$

The marked price of a watch was Rs. 720. A man bought the same for Rs. 550.80 after getting two successive discounts, the first being 10%. The second discount rate is एक घड़ी का अंकित मूल्य 720 रु था। एक व्यक्ति ने दो लगातार छूट प्राप्त करने के बाद इसे 550.80 रु में खरीदा, पहला छूट 10% की थी। दूसरी छूट का दर ज्ञात करे:

- a) 18%      b) 14%  
 c) 15%      d) 12%

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$$\begin{array}{r} 92 \\ \hline 1104 \times 5 \\ \hline 1500 \times 4 \\ \hline \end{array}$$

A fan is listed at **Rs.1500** and a discount of 20% is offered on the list price. What additional discount must be offered to the customer to bring the net price to **Rs.1104**?

एक पंखे को 1500 रुपये में अंकित किया जाता है और अंकित मूल्य पर 20% की छूट प्रदान की जाती है। ग्राहक को कितनी अतिरिक्त छूट प्रदान की जानी चाहिए कि उसे पंखा 1104 रुपये में मिल जाये?

- a) 8%                      b) 10%  
c) 12%                     d) 15%

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$$\begin{aligned} & \text{684} \\ & \underline{8.16 \times 20} \\ & \underline{12 \times 17 \times 100} \end{aligned}$$

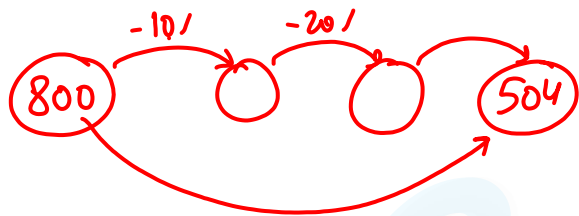
A pen is listed for Rs.12. A discount of 15% is given on it. A second discount is given bringing the price down to Rs.8.16. The rate of second discount is

एक कलम पर 12 रुपये अंकित किये गये। इस पर 15% की छूट दी गई। एक दूसरी छूट देने पर इसकी कीमत 8.16 रुपये तक कम हो गई। दूसरी छूट का दर ज्ञात कीजिये?

- a) 15%                      b) 18%  
c) 20%                      d) 25%

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$$\frac{504 \times 10 \times 5}{800 \times 9 \times 4} = \frac{7}{8} - 1$$

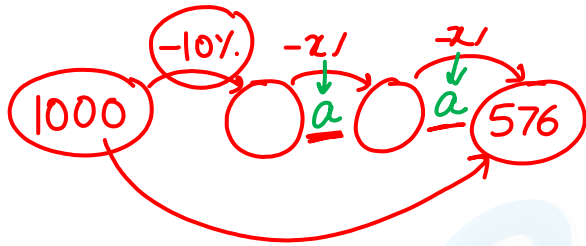
A shopkeeper offers two discounts of 10% and 20% on a bag listed at **Rs.800**. But a sticky bargainer availed one more discount and bought the bag for **Rs.504**. Find the rate percent of the third discount.

800 रूपए अंकित मूल्य वाली बैग पर एक दुकानदार क्रमशः 10% और 20% के दो बट्टे देता है। पर एक जिद्दी ग्राहक ने एक और बट्टा लेकर 504 रूपए में बैग खरीद लिया। तीसरे बट्टे की प्रतिशत बताइए।

- a) 12.5
- b) 10
- c) 15
- d) 14.28

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$$\sqrt{\frac{576 \times 10}{100 \times 9}} = \frac{8}{10} \rightarrow -2$$

20%

After offering a discount of 10% and two more discounts of equal rate, a shopkeeper sold a bat marked at Rs.1000 in Rs.576. Find the price if only third discount would have been offered.

एक दुकानदार ने 1000 रूपए अंकित मूल्य के बल्ले पर 10% के बट्टे के बाद समान प्रतिशत की दर से दो बट्टे और दिए, और बल्ले को 576 रूपए में बेच दिया। सिर्फ तीसरे वाला बट्टा देने के बाद बल्ले की कीमत क्या होगी?

- a) 640                      b) 750                      c) 826                      **d) 800**

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$$\sqrt{\frac{1521}{25}} = \frac{39}{5} = 7.8 = 7\frac{4}{5} = 7\frac{8}{10} = 7\frac{16}{20} = 7\frac{32}{40} = 7\frac{64}{80} = 7\frac{128}{160} = 7\frac{256}{320} = 7\frac{512}{640} = 7\frac{1024}{1280} = 7\frac{2048}{2560} = 7\frac{4096}{5120} = 7\frac{8192}{10240} = 7\frac{16384}{20480} = 7\frac{32768}{40960} = 7\frac{65536}{81920} = 7\frac{131072}{163840} = 7\frac{262144}{327680} = 7\frac{524288}{655360} = 7\frac{1048576}{1310720} = 7\frac{2097152}{2621440} = 7\frac{4194304}{5242880} = 7\frac{8388608}{10485760} = 7\frac{16777216}{20971520} = 7\frac{33554432}{41943040} = 7\frac{67108864}{83886080} = 7\frac{134217728}{167772160} = 7\frac{268435456}{335544320} = 7\frac{536870912}{671088640} = 7\frac{1073741824}{1342177280} = 7\frac{2147483648}{2684354560} = 7\frac{4294967296}{5368709120} = 7\frac{8589934592}{10737418240} = 7\frac{17179869184}{21474836480} = 7\frac{34359738368}{42949672960} = 7\frac{68719476736}{85899345920} = 7\frac{137438953472}{171798691840} = 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= 7\frac{2305843009213693952}{2882303761517117440} = 7\frac{4611686018427387904}{5764607523034234880} = 7\frac{9223372036854775808}{11529215046068469760} = 7\frac{18446744073709551616}{23058430092136939520} = 7\frac{36893488147419103232}{46116860184273879040} = 7\frac{73786976294838206464}{92233720368547758080} = 7\frac{147573952589676412928}{184467440737095516160} = 7\frac{295147905179352825856}{368934881474191032320} = 7\frac{590295810358705651712}{737869762948382064640} = 7\frac{1180591620717411303424}{1475739525896764129280} = 7\frac{2361183241434822606848}{2951479051793528258560} = 7\frac{4722366482869645213696}{5902958103587056517120} = 7\frac{9444732965739290427392}{11805916207174113034240} = 7\frac{18889465931478580854784}{23611832414348226068480} = 7\frac{37778931862957161709568}{47223664828696452136960} = 7\frac{75557863725914323419136}{94447329657392904273920} = 7\frac{151115727451828646838272}{188894659314785808547840} = 7\frac{302231454903657293676544}{377789318629571617095680} = 7\frac{604462909807314587353088}{755578637259143234191360} = 7\frac{1208925819614629174706176}{1511157274518286468382720} = 7\frac{2417851639229258349412352}{3022314549036572936765440} = 7\frac{4835703278458516698824704}{6044629098073145873530880} = 7\frac{9671406556917033397649408}{12089258196146291747061760} = 7\frac{19342813113834066795298816}{24178516392292583494123520} = 7\frac{38685626227668133590597632}{48357032784585166988247040} = 7\frac{77371252455336267181195264}{96714065569170333976494080} = 7\frac{154742504910672534362390528}{193428131138340667952988160} = 7\frac{309485009821345068724781056}{386856262276681335905976320} = 7\frac{618970019642690137449562112}{773712524553362671811952640} = 7\frac{1237940039285380274899124224}{1547425049106725343623905280} = 7\frac{2475880078570760549798248448}{3094850098213450687247810560} = 7\frac{4951760157141521099596496896}{6189700196426901374495621120} = 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$$\sqrt[3]{\frac{21,6}{1000}} = \frac{6}{10} \rightarrow -4$$

Three equal successive discounts % allowed on an article affect as single discount of 78.4%. Find each equal discount % ?

तीन समान क्रमागत छूट 78.4% की एकल छूट के बराबर है। प्रत्येक छूट क्या होगी?

a) 38.33%

b) 37.5%

c) 40%

d) 44.44%

$$\begin{array}{r} 100 \\ - 78.4 \\ \hline 21.6 \end{array}$$

coaching center

+x%

+2x% - x%

$$\left(x - \frac{2x^2}{50+100}\right)\%$$

$$x\% \cdot 1000 = \left(x - \frac{2x^2}{25}\right)\% \cdot 2000$$

$$\frac{x^2}{25} = x$$

$$x = 25$$

Traders A and B buy two goods for Rs. 1000 and Rs. 2000 respectively. Trader A marks his goods up by x%, while trader B marks his goods up by 2x% and offers a discount of x%. If both make the same non-zero profit, find x.

व्यापारी A और B दो सामानों को क्रमशः 1000 रु और 2000 रु में खरीदते हैं। ट्रेडर A अपने माल को x% तक चिह्नित करता है, जबकि व्यापारी B अपने माल को 2x% तक चिह्नित करता है और x% की छूट प्रदान करता है। यदि दोनों एक ही गैर-शून्य लाभ कमाते हैं, तो x का मान ज्ञात करें।

- a) 25%  
c) 37.5%

- b) 12.5%  
d) 40%

+x% -x%

$$\frac{x}{100} = \frac{x}{50}$$

$$x = 50$$

A dealer gives as much discount (in %) as much he marks up (in %) above the cost price. What is the mark up percentage if the loss (in %) is half of the mark up (in %)?

एक डीलर लागत मूल्य से जितना अधिक (% में) मार्क अप करता है, वह उतना ही छूट (प्रतिशत में) देता है। यदि हानि प्रतिशत मार्क अप प्रतिशत का आधा है तो मार्क अप प्रतिशत क्या है?

- a) 20%                      b) 40%  
c) Can't be determine    d) None of these

coaching center

50 successive discounts of 2%, 4%, 6%, 8% and so on will result in a single discount of:

क्रमशः 2%, 4%, 6%, 8%, ..... की 50 क्रमागत छूटों के बराबर एकल छूट ज्ञात करें?

a) 150%

b) 250%

c) 100%

d) 50%

1st

2%, 4%, 6%,

50<sup>th</sup>

100%

*coaching center*

$$(10800 \times a \times a - 1808) \times \frac{9}{8} = 4500 \times a$$

$$= 4000$$

$$\frac{4}{5} \times \frac{1}{3} = 80 \times \frac{1}{3} = 26\frac{2}{3}\% = 5808$$

$$a^2 = \frac{484}{9} = \frac{22}{3} \Rightarrow a = \frac{22}{3}$$

$$\frac{4}{15} \times 100 =$$

Marked price of a refrigerator is Rs. 10800. Two successive discounts each  $x\%$  are given on this refrigerator. Due to further bargaining of customer discount of Rs. 1808 are also allowed. Now shopkeeper charges 12.5% G.S.T on the discounted price and sold it for Rs. 4500. Find value of  $x$ ?

एक रेफ्रिजरेटर का अंकित मूल्य रु 10800 है, इस रेफ्रिजरेटर पर  $x\%$  की दो क्रमिक छूट दी गई है। आगे ग्राहक की सौदेबाजी के कारण Rs. 1808 की अतिरिक्त छूट दी जाती है। अब दुकानदार छूट के बाद मूल्य पर 12.5% GST चार्ज करता है और इसे 4500 रुपये में बेचता है।

- a) 27.5%      b) 28.33%  
c) 25%      d) 26.66%