Chapter 7

Trade Discounts
Cash Discounts
(and Freight Charges)
Distribution Chain

- Manufacturer (General Mills)
- Wholesaler (Certified Grocers)
- Retailer (Pop’s Grocery or Ralphs)
F.O.B. (free on board)

Shipper: Pays from shipping point to F.O.B. location.

Receiver: Pays from F.O.B. location to the destination (most common type of shipping)

A help: Just remember that the buyer pays from the F.O.B point to his own place. Through the process of elimination, you can figure out freight problems in this way. (If the buyer is not paying, then the seller is.)

A note: Keep in mind that the one who pays the freight is really the one who ultimately pays for it. For example, the seller may pay the trucking company to come pick up the product, but he will then, in turn, charge the buyer for the freight charge by putting it on the buyer’s invoice. In this way, the buyer is the one who ultimately pays for the freight.
Shipping Point

F.O.B. Dallas

Fullerton ➔ Dallas ➔ Atlanta

Buyer pays shipping

F.O.B. Atlanta (destination)

Fullerton ➔ Atlanta

Seller pays shipping

F.O.B. Fullerton (shipping point) most common

Fullerton ➔ Atlanta

Buyer pays shipping

Destination Point
Trade/Cash Discounts

- A **Trade Discount** is a reduction off the original selling price (list price) of an item and is not related to early payment.

- A **Cash Discount** is the result of an early payment based on the terms of the sale.
# Invoice

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit List Price</th>
<th>Amount</th>
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<tbody>
<tr>
<td>50 Managerial Accounting - Jones</td>
<td>$ 95.66</td>
<td>$ 4,783.00</td>
</tr>
<tr>
<td>10 Marketing - McCarthy</td>
<td>$ 89.50</td>
<td>895.00</td>
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<tr>
<td><strong>Total List Price</strong></td>
<td><strong>$ 5,678.00</strong></td>
<td></td>
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<tr>
<td><strong>Less: Trade Discount 25%</strong></td>
<td><strong>1,419.50</strong></td>
<td></td>
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<tr>
<td><strong>Net Price</strong></td>
<td><strong>$ 4,258.50</strong></td>
<td></td>
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<tr>
<td><strong>Plus: Prepaid Shipping Charge</strong></td>
<td><strong>125.00</strong></td>
<td></td>
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<tr>
<td><strong>Total Invoice Amount</strong></td>
<td><strong>$ 4,383.50</strong></td>
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</table>

2% discount if paid within 10 days of the invoice date, otherwise the net is due within 30 days (terms of sale)
Trade Discount Amount
(Step 1 of 2 in Arriving at the Net Price)

List price (MSRP)
\[ \times \text{Trade discount rate} \]
\[ \text{Trade discount amount} \]

\[
\begin{align*}
\text{List price (MSRP)} & = 5678.00 \\
\times .25 & = 1419.50 \\
\text{Trade discount amount} & = 1419.50
\end{align*}
\]

Example uses a 25% trade discount and a list price of $5,678.00
Net Price Formula
(Step 2 of 2 in Arriving at the Net Price)

List price
- Trade discount amount
Net Price

$5,678.00
- 1,419.50
$4,258.50

Example assumes a list price of $5,678.00 and a trade discount amount of $1,419.50.
Extra Info.

- Retailers who buy large quantities from a wholesaler or manufacturer will often get a larger discount rate than those who buy less.

- Manufacturers and wholesalers cannot give trade discounts on freight because that is charged by the shipping company.

- Manufacturers and wholesalers cannot give trade discounts on sales tax that is charged by the state.
Complement - The difference between the discount rate and 100%

If the trade discount is 25%, the complement is 75% \((100\%-25\%)\)
The list price of office equipment is $3,000. The manufacturer offers a 30% trade discount. What are the trade discount amount (TDA) and the net price?

TDA = $3,000 x .30 = $900

Net Price = $3,000 - $900 = $2,100

Using Complement

$3,000 x .70 = $2,100
Calculating List Price When Net Price and Trade Discount Rate Are Known

List Price = \[
\frac{\text{Net Price}}{\text{Complement of trade discount rate}}
\]

Office equipment has a $2,100 net price and a 30% trade discount. What is the list price?

\[
100\% - 30\% = 70\%
\]

\[
\frac{2,100}{.70} = \frac{2,100}{\frac{70}{100}}
\]

\[
\text{List Price} = $3,000
\]
Chain Discounts

Two or more discounts:
15/10/5

To calculate discount:
15 + 10 + 5 = 30%

Find the net price equivalent rate (multiply the complements):

100% 100% 100%

-15% -10% - 5%

.85 x .90 x .95 = .72675
Calculating Net Price Using Net Price Equivalent Rate

The list price of office furniture is $20,000. With a chain discount of 20/10/5, what is the net price?

Find the net price equivalent rate (multiply the complements):

\[ .80 \times .90 \times .95 = .684 \]

$20,000 \times .684 = $13,680

Trade Discount Amount

$20,000 - $13,680 = $6,320

Never rounded
Calculating Trade Discount Amount Using Single Equivalent Discount Rate

The list price of office furniture is $20,000.

With a chain discount of 20/10/5, what is the net price?

Find the net price equivalent rate (multiply the complements)

\[ .80 \times .90 \times .95 = .684 \]

Single equivalent discount rate

\[ 1.00 - .684 = .316 \]

Trade discount amount ➔

\[ $20,000 \times .316 = $6,320 \]

Net price ➔

Net price is $13,680
### Cash Discounts

Discount for prompt payment. Not taken on freight, returned goods, sales tax, & trade discounts.

<table>
<thead>
<tr>
<th>Credit Period</th>
<th>Mar. 1</th>
<th>Mar. 31</th>
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<tr>
<td>Time period sellers give buyers to pay invoices</td>
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<table>
<thead>
<tr>
<th>Discount Period</th>
<th>Mar. 1</th>
<th>Mar. 11*</th>
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<tr>
<td>Time period buyer has to take advantage of cash discount</td>
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*Invoice date is day zero.*
Table 7.1 - Exact-days-in-a-year Calendar

Inside back cover of Business Mathematics Handbook

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<td>365</td>
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How to Tell When Pmt. is Due
Using exact days in a year calendar

Example 1

Invoice dated August 12, due in 90 days
Look up August 12 on the exact days in a year calendar
August 12 is day 224
Add 90 days to day 224
Day 314 is the date on which payment is due
Look up day 314 on the exact-days-in-a-year calendar
It is November 10

\[
\begin{array}{c@{\quad}c}
224 & \text{Aug 12} \\
+90 & \text{credit period} \\
314 & \text{Nov. 10}
\end{array}
\]
Example 2 (when the credit period goes into the next year)

Invoice dated December 5, due after 80 days

December 5 is day 339

<table>
<thead>
<tr>
<th>365 days in year</th>
<th>80 days from Dec. 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>-339 days until Dec. 5</td>
<td>- 26 days used in this year</td>
</tr>
<tr>
<td>26 days used in this year</td>
<td>54 days in new year (Feb. 23)</td>
</tr>
</tbody>
</table>
Common Cash Discount Credit Terms Offered by Sellers

- Ordinary dating - most common
- Receipt of goods (ROG) - used when delivery is likely to take a while
- End of month (EOM), rare

*Keep in mind that freight charges, returned goods, sales tax, and trade discounts must be subtracted from the gross before calculating a cash discount.*
Ordinary Dating Method

2/10, n/30 - “two ten, net thirty”

$500 invoice dated May 3; terms 2/10, n/30; paid on May 10.

Discount Period
10 Days

May 3

No Discount
Day 11 - 30

May 13

Credit Period (30 days)

June 2

$500 x .02 = $10
$500 - $10 = $490
or
$500 x .98 = $490
Ordinary Dating Method

2/10, 1/15, n/30 (two ten, one fifteen, net 30)

$600 invoice dated May 8; terms 2/10, 1/15, n/30; paid on May 22.

<table>
<thead>
<tr>
<th>2% Disc. Period</th>
<th>1% Disc. Period</th>
<th>Disc. Cannot be taken</th>
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<tbody>
<tr>
<td>10 Days</td>
<td>Days 11-15</td>
<td></td>
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Credit Period (30 days)

$600 -100 freight
$500 x .01 = $5
$500 - $5 = $495
$495 + 100 (freight) = $595

OR

$500 x .99 = $495
$495 + 100 (freight) = $595
Receipt of Goods (ROG)

1/10, n/60 ROG - Cash discount period begins when the buyer receives the goods

$1,000 invoice dated May 5, received goods June 7; terms 1/10, n/60 ROG; paid on June 17. No freight chrg.

$1,000 x.01 = $10
$1,000 - $10 = $990
or
$1,000 x .99 = $990

<table>
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<tr>
<th>Invoice Date</th>
<th>Discount Period</th>
<th>No Discount</th>
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<tbody>
<tr>
<td>May 5</td>
<td>10 Days</td>
<td>Day 11 - 60</td>
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<tr>
<td>June 7</td>
<td>June 17</td>
<td>Aug. 6</td>
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Credit Period (60 days)
On invoices dated the 25th of a month or earlier, the buyer can take the cash discount if he pays the invoice by the first 10 days of the next month. If the buyer misses the discount period, the full amount is due within 20 days after the end of the discount period.

If the invoice is dated after the 25th of the month, the buyer gains an additional month. This is because the seller guarantees the buyer 15 days of credit. (If a buyer bought goods on August 29, September 10 would be only 12 days later). The cash discount period ends on the 10th day of the second month that follows the sale.
End of Month (EOM) first method (invoices dated **on or before** the 25th of the month)

2/10 EOM - 2% discount, up until the 10th of the following month

$400 invoice dated Sept. 3; terms 2/10 EOM; paid on October 8. No freight charge.

$400 x .02 = $8
$400 - $8 = $392
or
$400 x .98 = $392

Credit Period

Discount Period ends on Oct. 10

No Discount 11th - 30th

20 days after end of discount period

Invoice Date

Sept. 3

Paid Oct. 8

Oct. 10

Oct. 30
End of Month (EOM) second method (invoices dated after the 25th of the month)

2/10 EOM – (25th rule) - Skip a month to ensure buyer of 15 days to pay

$400 invoice dated Sept. 28; terms 2/10 EOM; paid on November 8. No freight charges.

$400 x .02 = $8
$400 - $8 = $392
or
$400 x .98 = $392
Partial Payment

Sara owes $400. Sara’s terms were 3/10, n/30. Within 10 days Sara sent in a payment of $100. How much is her new balance?

100% - 3% = .97  ➔  Find the complement of discount rate

$100
.97 = $103.09  ➔  Divide partial payment by the complement

400 – 103.09  ➔  Subtract step 2 from the amount owed

$296.91  ➔  Her new balance