



## 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.



### F.O.B. Dallas



### F.O.B. Atlanta (destination)



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



# 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

2% discount if paid within 10 days of the invoice date, otherwise the net is due within 30 days (terms of sale)

**Irwin/ McGraw-Hill Publ.Co.**  
1333 Burr Ridge Parkway  
Burr Ridge, Illinois 60521

**Invoice No. 5582**

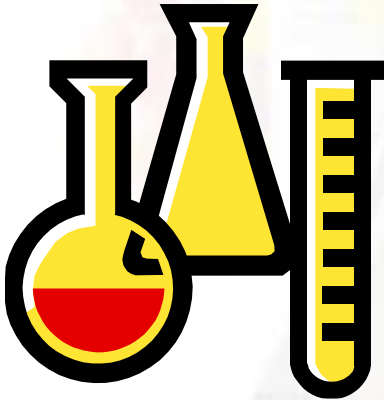
**Date: July 8, 2006**  
**Ship: Two-day UPS**  
**Terms: 2/10, n/30** ←

**Sold to: North Shore Community College Bookstore**  
1 Ferncroft Road  
Danvers, MA 01923

## Amount

50 Managerial Accounting - Jones	\$ 95.66	\$ 4,783.00
10 Marketing - McCarthy	\$ 89.50	<u>895.00</u>
Total List Price		\$ 5,678.00
Less: Trade Discount 25%		<u>1,419.50</u>
Net Price		\$ 4,258.50
Plus: Prepaid Shipping Charge		<u>125.00</u>
Total Invoice Amount		\$ 4,383.50

## Trade Discount Amount (Step 1 of 2 in Arriving at the Net Price)



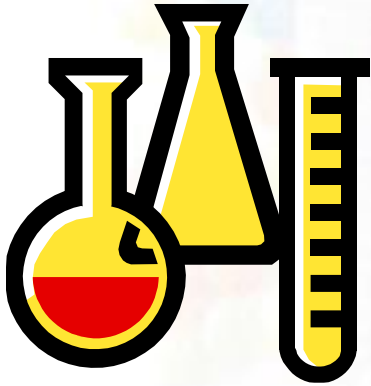
List price (MSRP)  
x Trade discount rate  
Trade discount amount

\$ 5678.00  
    x .25  
\$1419.50      Trade discount amount

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**

Trade discount amount

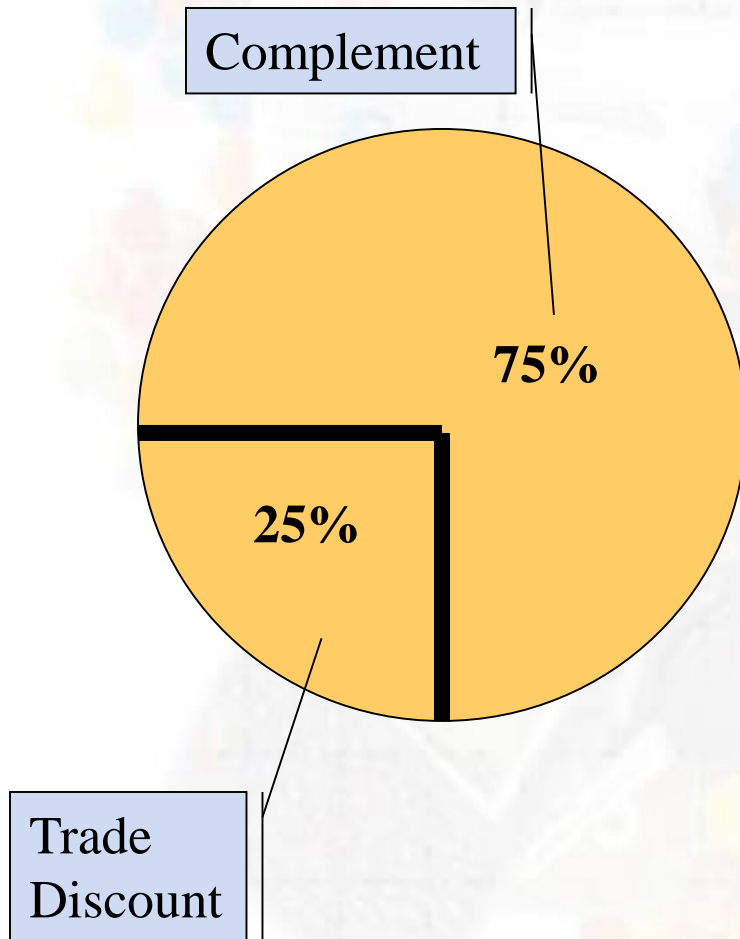
**Example assumes a list price of \$5,678.00 and a trade discount amount of \$1,419.50.**



# 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.

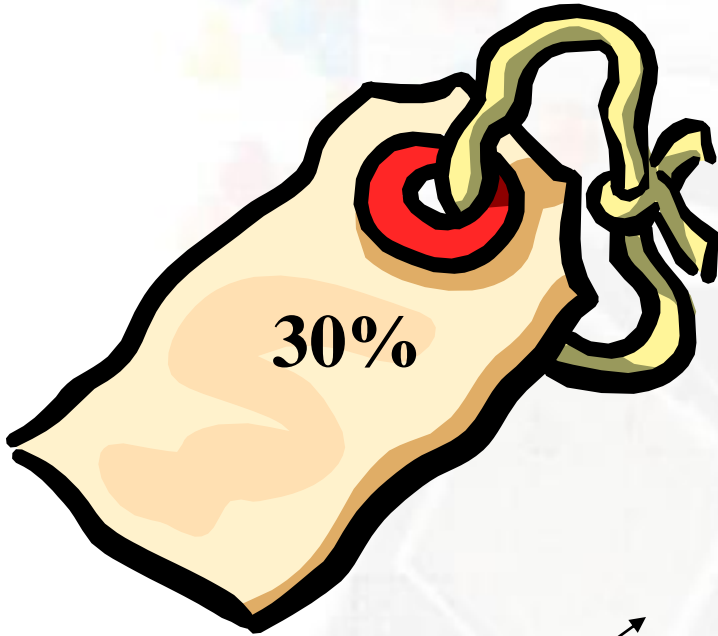
# Complement



**Complement - The difference between the discount rate and 100%**

**If the trade discount is 25%, the complement is 75% (100%-25%)**

# Single Trade Discount



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?

$$\text{TDA} = \$3,000 \times .30 = \$900$$

$$\text{Net Price} = \$3,000 - \$900 = \$2,100$$

both methods

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Using Complement

$$\$3,000 \times .70 = \$2,100$$

## Calculating List Price When Net Price and Trade Discount Rate Are Known

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

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

$$100\% - 30\% = 70\%$$

$$\frac{\$2,100}{.70}$$

$$\text{List Price} = \$3,000$$

# Chain Discounts

Two or more discounts:

15/10/5



To calculate discount

$$15 + 10 + 5 = \text{30\%}$$

Find the net price equivalent  
rate (multiply the complements)

$$100\% \quad 100\% \quad 100\%$$

$$\underline{-15\%} \quad \underline{-10\%} \quad \underline{-5\%}$$

$$.85 \times .90 \times .95 = .72675$$

# 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.

## Credit Period

Mar. 1

Mar. 31

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Time period sellers give buyers to pay invoices

## Discount Period

Mar. 1

Mar. 11\*

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Time period buyer has to take advantage of cash discount

\*Invoice date is day zero.



## Table 7.1 - Exact-days-in-a-year Calendar

### Inside back cover of Business Mathematics Handbook

Day of month	31 Jan.	28 Feb.	31 Mar	30 Apr	31 May	30 Jun	31 Jul	31 Aug	30 Sep	31 Oct	30 Nov	31 Dec
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29	-	88	119	149	180	210	241	272	302	333	363
30	30	-	89	120	150	181	211	242	273	303	334	364
31	31	-	90	-	151	-	212	243	-	304	-	365

## 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

224	Aug 12
<u>+90</u>	credit period
314	Nov. 10

# How to Tell When Pmt. is Due Using exact days in a year calendar

## Example 2 (when the credit period goes into the next year)

Invoice dated December 5, due after 80 days

December 5 is day 339

365 days in year		80 days from Dec. 5
<u>-339</u> days until Dec. 5		- <u>26</u> days used in this year
<b>26 days used in this year</b>		<b>54 days in new year (Feb. 23)</b>

# 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”**

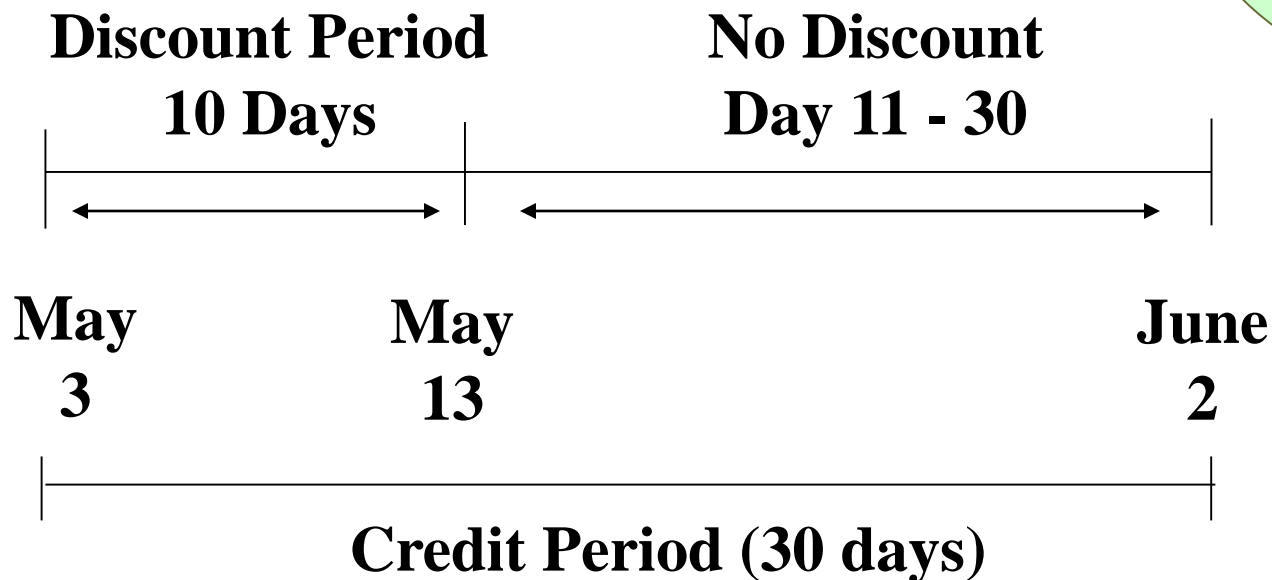
**\$500 invoice dated May 3; terms  
2/10, n/30; paid on May 10.**

$$\$500 \times .02 = \$10$$

$$\$500 - \$10 = \$490$$

or

$$\$500 \times .98 = \$490$$



# 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.**

**\$600 - 100 freight**

**\$500 x .01 = \$5**

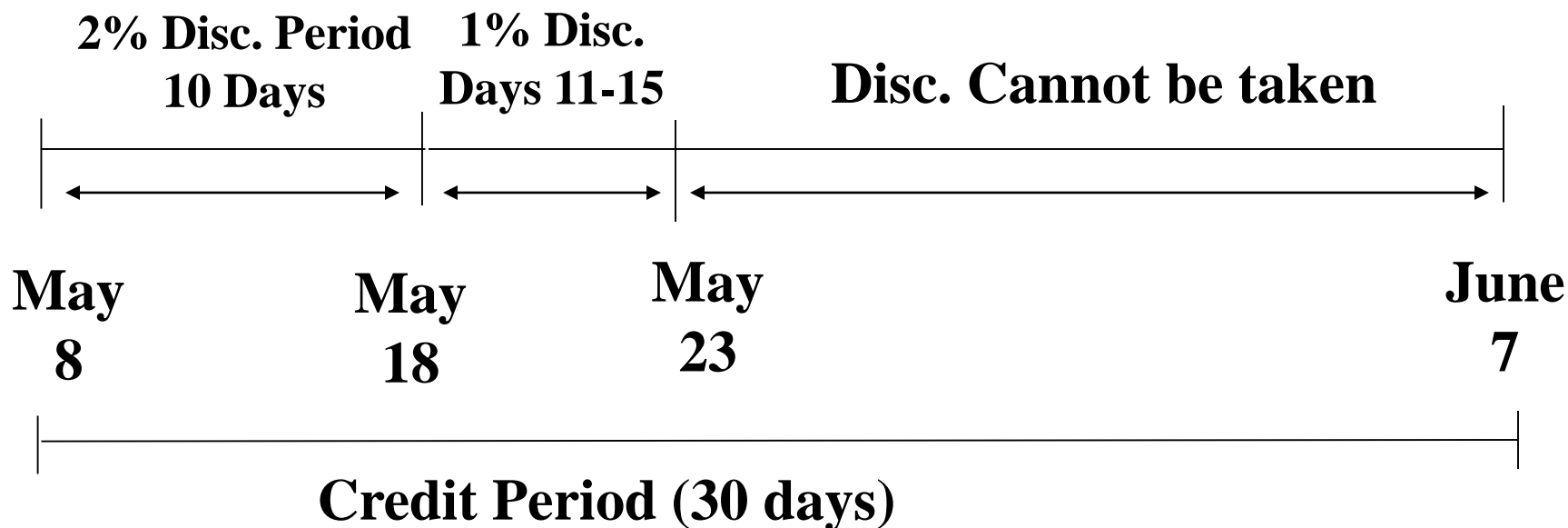
**\$500 - \$5 = \$495**

**\$495 + 100 (freight) = \$595**

**OR**

**\$500 x .99 = 495**

**\$495 + 100 (freight) = \$595**

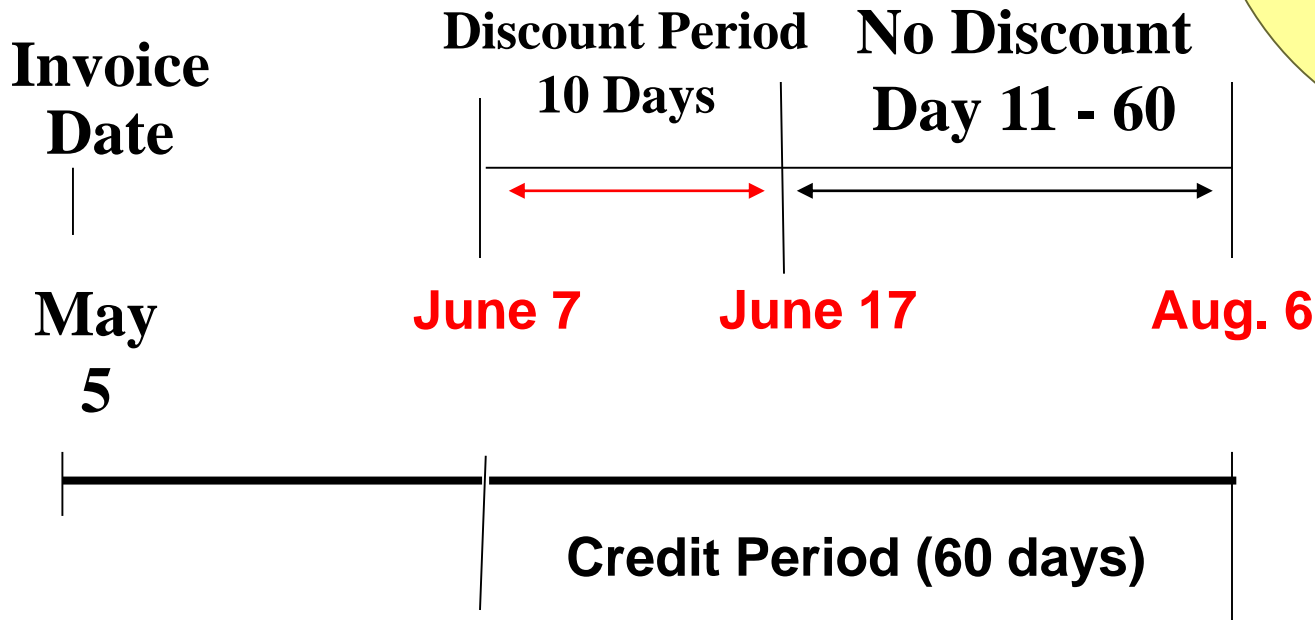


# Receipt of Goods (ROG)

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.**

$$\begin{aligned} \$1,000 \times .01 &= \$10 \\ \$1,000 - \$10 &= \$990 \\ \text{or} \\ \$1,000 \times .99 &= \$990 \end{aligned}$$



## EOM (end of month)

- On invoices dated the **25<sup>th</sup> 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 25<sup>th</sup> 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 10<sup>th</sup> day of the *second* month that follows the sale.



End of Month (EOM) first method  
(invoices dated **on or before** the 25<sup>th</sup> 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.**

$$\begin{aligned} \$400 \times .02 &= \$8 \\ \$400 - \$8 &= \$392 \\ \text{or} \\ \$400 \times .98 &= \$392 \end{aligned}$$

**Invoice Date**

**Discount Period ends on Oct. 10**

**No Discount 11th - 30th**

**Sept. 3**

**Paid Oct. 8**

**Oct. 10**

**Oct. 30**

20 days after end of discount period

**Credit Period**

End of Month (EOM) second method  
(invoices dated **after** the 25<sup>th</sup> of the month)

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

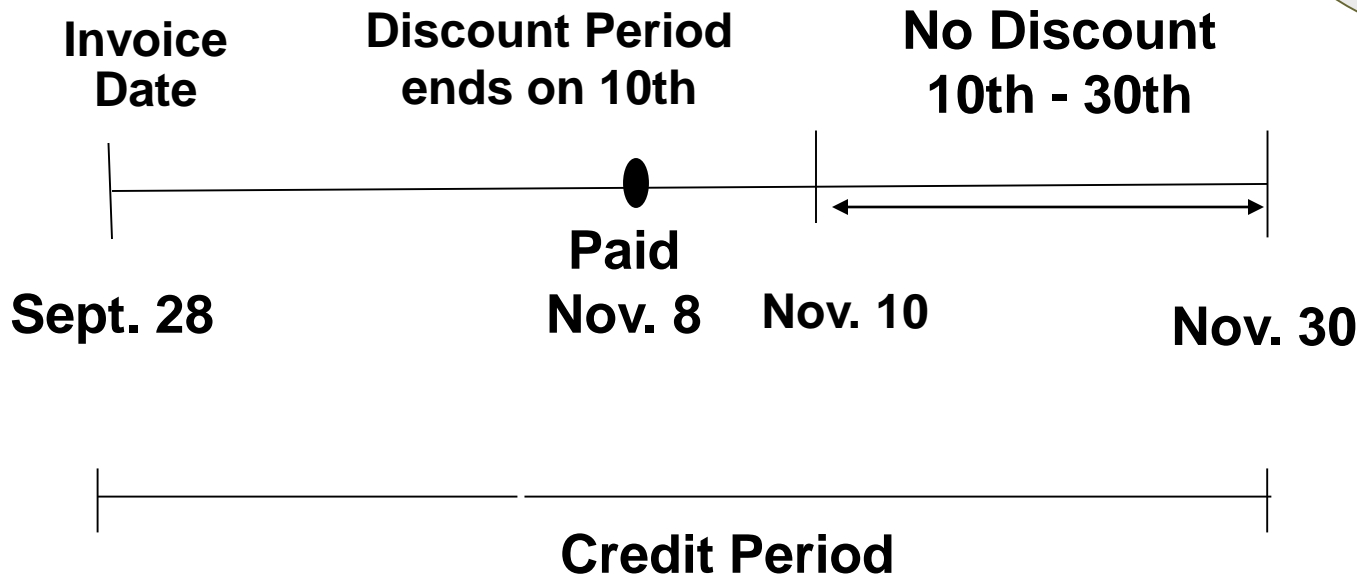
**\$400 invoice dated Sept. 28; terms  
2/10 EOM; paid on November 8. No  
freight charges.**

$$\$400 \times .02 = \$8$$

$$\$400 - \$8 = \$392$$

or

$$\$400 \times .98 = \$392$$



## 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?

$$100\% - 3\% = .97 \quad \leftarrow \text{Find the complement of discount rate}$$

$$\frac{\$100}{.97} = \$103.09 \quad \leftarrow \text{Divide partial payment by the complement}$$

$$400 - 103.09 \quad \leftarrow \text{Subtract step 2 from the amount owed}$$

$$\$296.91 \quad \leftarrow \text{Her new balance}$$