

Step 2. Calculate the single equivalent discount.

$$\text{Single equivalent discount} = 1 - \text{Net price factor}$$

$$\text{Single equivalent discount} = 1 - .5985 = .4015$$

Note: 40.15% is the single equivalent discount of the series 30%, 10%, and 5%.

Step 3. Calculate the amount of the trade discount.

$$\text{Trade discount} = \text{List price} \times \text{Single equivalent discount}$$

$$\text{Trade discount} = 10,000 \times .4015 = \$4,015$$

TRY IT EXERCISE 8

The Rainbow Appliance Center purchased an order of dishwashers and ovens listing for \$36,800. The manufacturer allows Rainbow a series of trade discounts of 25/15/10. What are the single equivalent discount and the amount of the trade discount?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 225.

REVIEW EXERCISES

SECTION

Calculate the following net price factors and net prices. For convenience, round net price factors to five decimal places when necessary.

List Price	Trade Discount Rates	Net Price Factor	Net Price
1. \$360.00	12/10	<u>.792</u>	<u>\$285.12</u>
2. 425.80	18/15/5	<u> </u>	<u> </u>
3. 81.75	20/10/10	<u> </u>	<u> </u>
4. 979.20	15/10/5	<u> </u>	<u> </u>
5. 7.25	25/15/10 $\frac{1}{2}$	<u> </u>	<u> </u>
6. .39	20/9/8	<u> </u>	<u> </u>

Calculate the following net price factors and single equivalent discounts. Round to five places when necessary.

Trade Discount Rates	Net Price Factor	Single Equivalent Discount
7. 15/10	<u>.765</u>	<u>.235</u>
8. 20/15/12	<u> </u>	<u> </u>
9. 25/15/7	<u> </u>	<u> </u>
10. 30/5/5	<u> </u>	<u> </u>
11. 35/15/7.5	<u> </u>	<u> </u>

Complete the following table. Round net price factors to five decimal places when necessary.

List Price	Trade Discount Rates	Net Price Factor	Single Equivalent Discount	Trade Discount	Net Price
12. \$7,800.00	15/5/5	<u>.76713</u>	<u>.23287</u>	<u>\$1,816.39</u>	<u>\$5,983.61</u>
13. 1,200.00	20/15/7	<u> </u>	<u> </u>	<u> </u>	<u> </u>
14. 560.70	25/15/5	<u> </u>	<u> </u>	<u> </u>	<u> </u>
15. 883.50	18/12/9	<u> </u>	<u> </u>	<u> </u>	<u> </u>
16. 4.89	12/10/10	<u> </u>	<u> </u>	<u> </u>	<u> </u>
17. 2,874.95	30/20/5.5	<u> </u>	<u> </u>	<u> </u>	<u> </u>

18. What is the net price factor of a 25/10 series of trade discounts?
19. What is the net price factor of a 35/15/10 series of discounts?
20. Kidzstuff.com ordered toys, games, and videos from a vendor. The order had a list price of \$10,300 less trade discounts of 25/15/12.
 - a. What is the net price factor?
 - b. What is the net price of the order?
21. Legacy Designs places an order for furniture listing for \$90,500 less trade discounts of 25/20.
 - a. What is the net price factor?
 - b. What is the net price of the order?



Daniel Acker/Bloomberg via Getty Images

Satellite radio, also called digital radio, receives radio signals broadcast from a network of satellites more than 22,000 miles above the earth. Sirius XM Radio, Inc., provides satellite radio services in the United States and Canada. In 2009, Sirius XM Radio had more than 19 million subscribers and revenues totaling \$2.42 billion.

The company offers a programming lineup of 117 channels to subscribers, which include 63 channels of commercial-free music and 54 channels of sports, news, talk, entertainment, and traffic and weather.

Source: www.highspeedsat.com,
www.siriusxm.com

22. Audio Giant received an order of Sirius XM satellite radios listing for \$9,500 with trade discounts of 25/13/8.
 - a. What is the net price factor?
 - b. What is the single equivalent discount?
 - c. What is the amount of the trade discount?
 - d. What is the net price of the order?
23. The Speedy Auto Service Center can buy auto parts from Southeast Auto Supply at a series discount of 20/15/5 and from Northwest Auto Supply for 25/10/8.
 - a. Which auto parts supplier offers a better discount to Speedy?
 - b. If Speedy orders \$15,000 in parts at list price per month, how much will it save in a year by choosing the lower-priced supplier?
24. La Fiesta Market buys merchandise from B. G. Distributors with a series discount of 35/15/7.
 - a. What is the single equivalent discount?
 - b. What is the amount of the trade discount on an order with a list price of \$5,700?

25. Midtown Market received the following items at a discount of 25/20/10: 18 cases of canned peaches listing at \$26.80 per case and 45 cases of canned pears listing at \$22.50 per case.

- What is the total list price of this order?
- What is the amount of the trade discount?
- What is the net price of the order?

26. Shopper's Mart purchased the following items. Calculate the extended total after the trade discounts for each line, the invoice subtotal, and the invoice total.

Quantity	Unit	Merchandise	Unit List	Trade Discounts	Extended Total
150	ea.	Blenders	\$59.95	20/15/15	_____
400	ea.	Toasters	\$39.88	20/10/10	_____
18	doz.	Coffee Mills	\$244.30	30/9/7	_____
12	doz.	Juicers	\$460.00	25/10/5	_____
				Invoice subtotal	_____
				Extra $5\frac{1}{2}\%$ volume discount on total order	_____
				Invoice total	_____

27. Referring back to Exercise 26, you have just been hired as the buyer for the kitchen division of Shopper's Mart, a general merchandise retailer. After looking over the discounts offered to the previous buyer by the vendor, you decide to ask for better discounts.

After negotiating with the vendor's salesperson, you now can buy blenders at trade discounts of 20/20/15 and juicers at 25/15/10. In addition, the vendor has increased the volume discount to $6\frac{1}{2}\%$.

- How much would have been saved with your new discounts based on the quantities of the previous order (Exercise 26)?

- As a result of your negotiations, the vendor has offered an additional discount of 2% of the total amount due if the invoice is paid within 15 days instead of the usual 30 days. What would be the amount of this discount?



Photo by Robert Brechner

The Pharmacy and Drug Store Industry

in the United States retails a range of prescription and over-the-counter products. These include medicines; apothecaries; health and beauty items such as vitamin supplements, cosmetics, and toiletries; and photo processing services. According to the National Association of chain drugstores, in 2009, the drugstore industry generated revenue of over \$200 billion.

Top U.S. drug retailers include Rite Aid, CVS, Target, Kmart, Kroger, Safeway, Duane Reade, Supervalu, Walgreens, and Walmart.



BUSINESS DECISION: THE ULTIMATE TRADE DISCOUNT

28. In 2009, as part of its bankruptcy reorganization, General Motors discontinued the Pontiac and Saturn models. One of the GM incentive programs designed to reduce inventory of these models was a \$7,000 extra dealer incentive for each of these vehicles that the dealer moved into its rental or service fleets.

As the accountant for a dealership with a number of these vehicles left in stock, your manager has asked you to calculate certain invoice figures. The normal trade discount from GM is 18%. If the average sticker price (list price) of these remaining vehicles at your dealership is \$23,500, calculate the following.

- What is the amount of the trade discount, including the incentive?
- What is the trade discount rate? Round to the nearest tenth of a percent.
- What is the net price (invoice price) to your dealership?
- If the cars were then sold from the fleets at \$1,000 over "invoice" (net price), what is the total percentage savings to the consumer based on the list price? Round to the nearest tenth of a percent.
- (Optional) Although these incentive prices reflect extraordinary discounts to the consumer, what other factors should a consumer consider before purchasing a "discontinued" brand of vehicle?

SECTION IV



CASH DISCOUNTS AND TERMS OF SALE

terms of sale The details of when an invoice must be paid and if a cash discount is being offered.

credit period The time period that the seller allows the buyer to pay an invoice.

net date, or due date The last day of the credit period.

cash discount An extra discount offered by the seller as an incentive for early payment of an invoice.

invoice date The date an invoice is written. The beginning of the discount and credit periods when ordinary dating is used.

cash discount period The time period in which a buyer can take advantage of the cash discount.

discount date The last day of the discount period.

As merchandise physically arrives at the buyer's back door, the invoice ordinarily arrives by mail through the front door. Today more and more arrive by e-mail. What happens next? The invoice has a section entitled **terms of sale**. The terms of sale are the details of when the invoice must be paid and whether any additional discounts will be offered.

Commonly, manufacturers allow wholesalers and retailers 30 days or even longer to pay the bill. In certain industries, the time period is as much as 60 or 90 days. This is known as the **credit period**. This gives the buyer time to unpack and check the order and, more important, begin selling the merchandise. This credit period clearly gives the wholesaler and retailer an advantage. They can generate revenue by selling merchandise that they have not paid for yet.

To encourage them to pay the bill earlier than the **net date, or due date**, sellers frequently offer buyers an optional extra discount over and above the trade discounts. This is known as a **cash discount**. Cash discounts are an extra few percent offered as an incentive for early payment of the invoice, usually within 10 to 15 days after the **invoice date**. This is known as the **cash discount period**. The last date for a buyer to take advantage of a cash discount is known as the **discount date**.

Both buyers and sellers benefit from cash discounts. Sellers get their money much sooner, which improves their cash flow, whereas buyers get an additional discount, which lowers their merchandise cost, thereby raising their margin or gross profit.

Cash discounts generally range from an extra 1% to 5% off the net price of the merchandise. A 1% to 5% discount may not seem significant, but it is. Let's say that an invoice is due in 30 days; however, a distributor would like payment sooner. It might offer the retailer a cash discount of 2% if the bill is paid within 10 days rather than 30 days. If the retailer chooses to take the cash discount, he or she must pay the bill by the 10th day after the date of the invoice. Note that this is 20 days earlier than the due date. The retailer is therefore receiving a 2% discount for paying the bill 20 days early.

The logic: There are 18.25 twenty-day periods in a year (365 days divided by 20 days). By multiplying the 2% discount by the 18.25 periods, we see that on a yearly basis, 2% cash discounts can *theoretically* amount to 36.5%. Very significant!

Cash discounts are so important to wholesalers' and retailers' "profit picture" that frequently they borrow the money on a short-term basis to take advantage of the cash discount savings. This procedure is covered in Chapter 10, "Simple Interest."

CALCULATING CASH DISCOUNTS AND NET AMOUNT DUE

Cash discounts are offered in the terms of sale. A transaction with no cash discount would have terms of sale of net 30, for example. This means the **net amount** of the invoice is due in 30 days. If a cash discount is offered, the terms of sale would be written as 2/10, n/30. This means a 2% cash discount may be taken if the invoice is paid within 10 days; if not, the net amount is due in 30 days. (See Exhibit 7-4.)

Exhibit 7-5 shows a time line of the discount period and credit period on an invoice dated October 15. The 2/10, n/30 terms of sale stipulate a cash discount if the bill is paid within 10 days. If not, the balance is due in 30 days. As you can see, the cash discount period runs for 10 days from the invoice date, October 15 to October 25. The credit period, 30 days, extends from the invoice date through November 14.

Sometimes two cash discounts are offered, such as 3/15, 1/25, n/60. This means a 3% cash discount is offered if the invoice is paid within 15 days, a 1% cash discount if the invoice is paid within 25 days, with the net amount due in 60 days.

Cash discounts cannot be taken on shipping charges or returned goods, only on the net price of the merchandise. If shipping charges are included in the amount of an invoice, they must be subtracted before the cash discount is taken. After the cash discount has been deducted, the shipping charges are added back to get the invoice total.

7-9

net amount The amount of money due from the buyer to the seller.

Terms of Sale

2/10, n/30

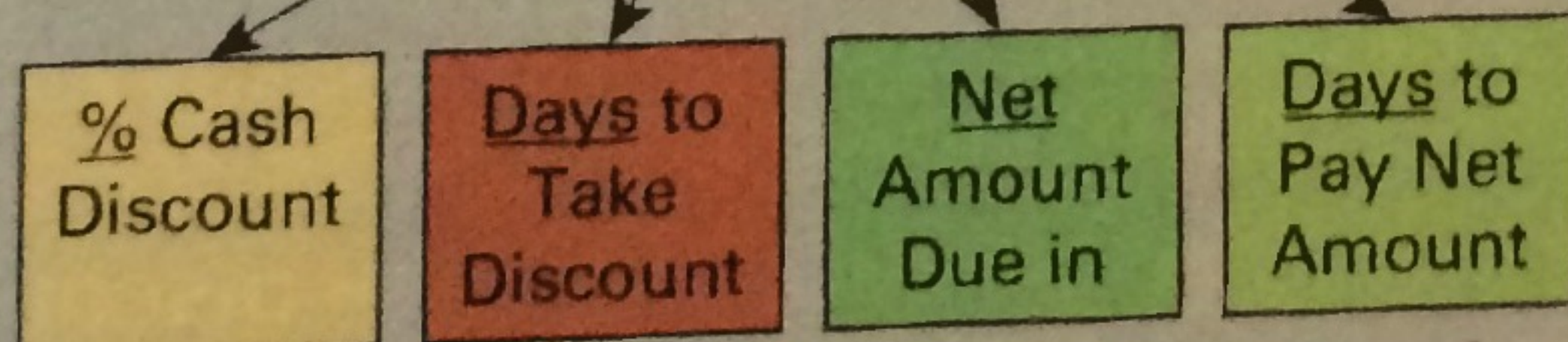


EXHIBIT 7-4

Terms of Sale

2/10, n/30 Terms of Sale

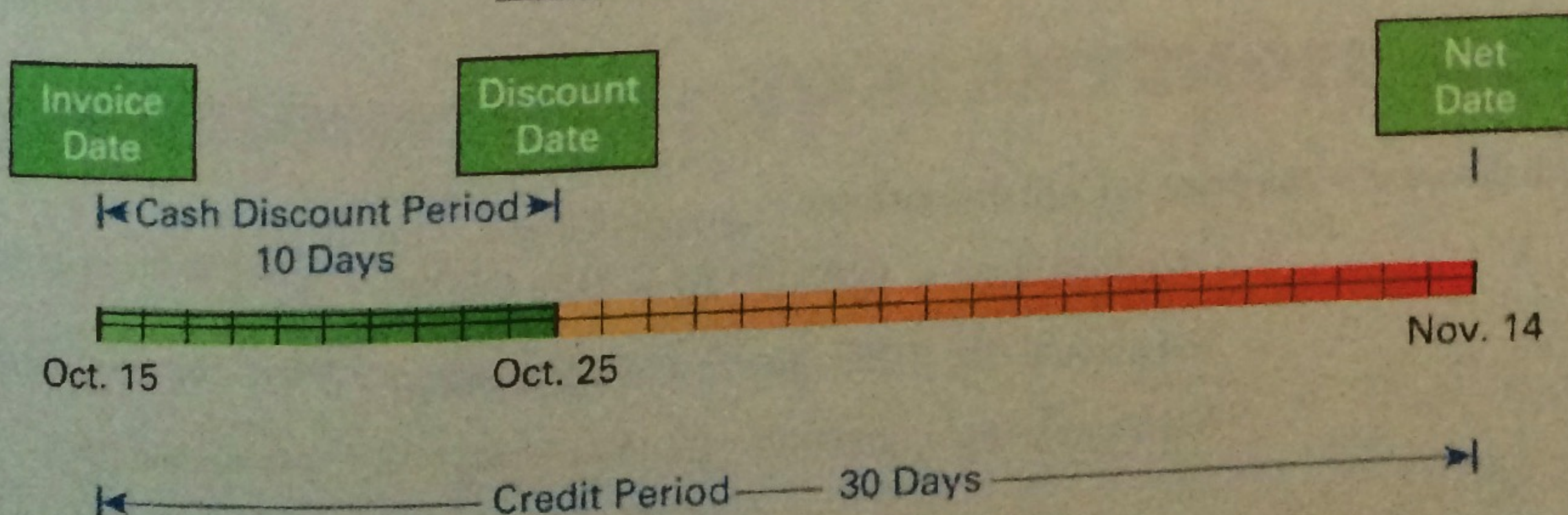


EXHIBIT 7-5

Terms of Sale Time Line



"Our terms are net 30 days. If you don't pay after 30 days, we come after you with a net!"

© 2002 by Randy Glasbergen. www.glasbergen.com

If arriving merchandise is damaged or is not what was ordered, those goods will be returned to the vendor. The amount of the returned goods must also be subtracted from the amount of the invoice. They are no longer a part of the transaction.

LEARNING TIP

Shipping charges on returned items are not subject to cash discount. They are deducted from the invoice before the cash discount is applied. After the discount is taken, shipping charges, if any, are added back to get the invoice total.

STEPS TO CALCULATE CASH DISCOUNT AND NET AMOUNT DUE

STEP 1. Calculate the amount of the cash discount by multiplying the cash discount rate by the net price of the merchandise.

$$\text{Cash discount} = \text{Net price} \times \text{Cash discount rate}$$

STEP 2. Calculate the net amount due by subtracting the amount of the cash discount from the net price.

$$\text{Net amount due} = \text{Net price} - \text{Cash discount}$$

Note: As with trade discounts, buyers are frequently more interested in the net amount due than the amount of the discount. When that is the case, we can simplify the calculation by using the complement method to determine the net amount due.

$$\text{Net amount due} = \text{Net price}(100\% - \text{Cash discount rate})$$

EXAMPLE 9 CALCULATING CASH DISCOUNT AND NET AMOUNT DUE

Rugs.com buys merchandise with an invoice amount of \$16,000 from Karistan Carpet Mills. The terms of sale are 2/10, n/30. What is the amount of the cash discount? What is the net amount due on this order if the bill is paid by the 10th day?

SOLUTION STRATEGY

$$\text{Cash discount} = \text{Net price} \times \text{Cash discount rate}$$

$$\text{Cash discount} = 16,000 \times .02 = \underline{\underline{\$320}}$$

$$\text{Net amount due} = \text{Net price} - \text{Cash discount}$$

$$\text{Net amount due} = 16,000 - 320 = \underline{\underline{\$15,680}}$$

TRY IT EXERCISE 9

Valiant Plumbing ordered sinks from a supplier. The sinks had a net price of \$8,300 and terms of sale of 3/15, n/45. What is the amount of the cash discount? What is the net amount due if the bill is paid by the 15th day?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 225

CALCULATING NET AMOUNT DUE, WITH CREDIT GIVEN FOR PARTIAL PAYMENT

Sometimes buyers do not have all the money needed to take advantage of the cash discount. Manufacturers and suppliers usually allow them to pay part of the invoice by the discount date and the balance by the end of the credit period. This **partial payment** earns partial cash discount credit. In this situation, we must calculate how much **partial payment credit** is given.

Here is how it works: Assume a cash discount of 4/15, n/45 is offered to a retailer. A 4% cash discount means that the retailer will pay 96% of the bill ($100\% - 4\%$) and receive 100% credit. Another way to look at it is that every \$0.96 paid toward the invoice earns \$1.00 credit. We must determine how many \$0.96s are in the partial payment. This will tell us how many \$1.00s of credit we receive.

7-10

partial payment When a portion of the invoice is paid within the discount period

partial payment credit The amount of the invoice paid off by the partial payment

STEPS TO CALCULATE PARTIAL PAYMENT CREDIT AND NET AMOUNT DUE

STEP 1. Calculate the amount of credit given for a partial payment by dividing the partial payment by the complement of the cash discount rate.

$$\text{Partial payment credit} = \frac{\text{Partial payment}}{100\% - \text{Cash discount rate}}$$

STEP 2. Calculate the net amount due by subtracting the partial payment credit from the net price.

$$\text{Net amount due} = \text{Net price} - \text{Partial payment credit}$$

IN THE BUSINESS WORLD

The extension of partial payment credit by vendors is important to retailers who don't always have enough funds to take advantage of the cash discount.

EXAMPLE 10 CALCULATING NET AMOUNT DUE AFTER A PARTIAL PAYMENT

Happy Feet, a chain of children's shoe stores, receives an invoice from a tennis shoe manufacturer on September 3 with terms of 3/20, n/60. The net price of the order is \$36,700. Happy Feet wants to send a partial payment of \$10,000 by the discount date and the balance on the net date. How much credit does Happy Feet get for the partial payment? What is the remaining net amount due to the manufacturer?

SOLUTION STRATEGY

$$\text{Partial payment credit} = \frac{\text{Partial payment}}{100\% - \text{Cash discount rate}}$$

$$\text{Partial payment credit} = \frac{10,000}{100\% - 3\%} = \frac{10,000}{.97} = \$10,309.28$$

$$\text{Net amount due} = \text{Net price} - \text{Partial payment credit}$$

$$\text{Net amount due} = \$36,700.00 - \$10,309.28 = \$26,390.72$$

TRY IT EXERCISE 10

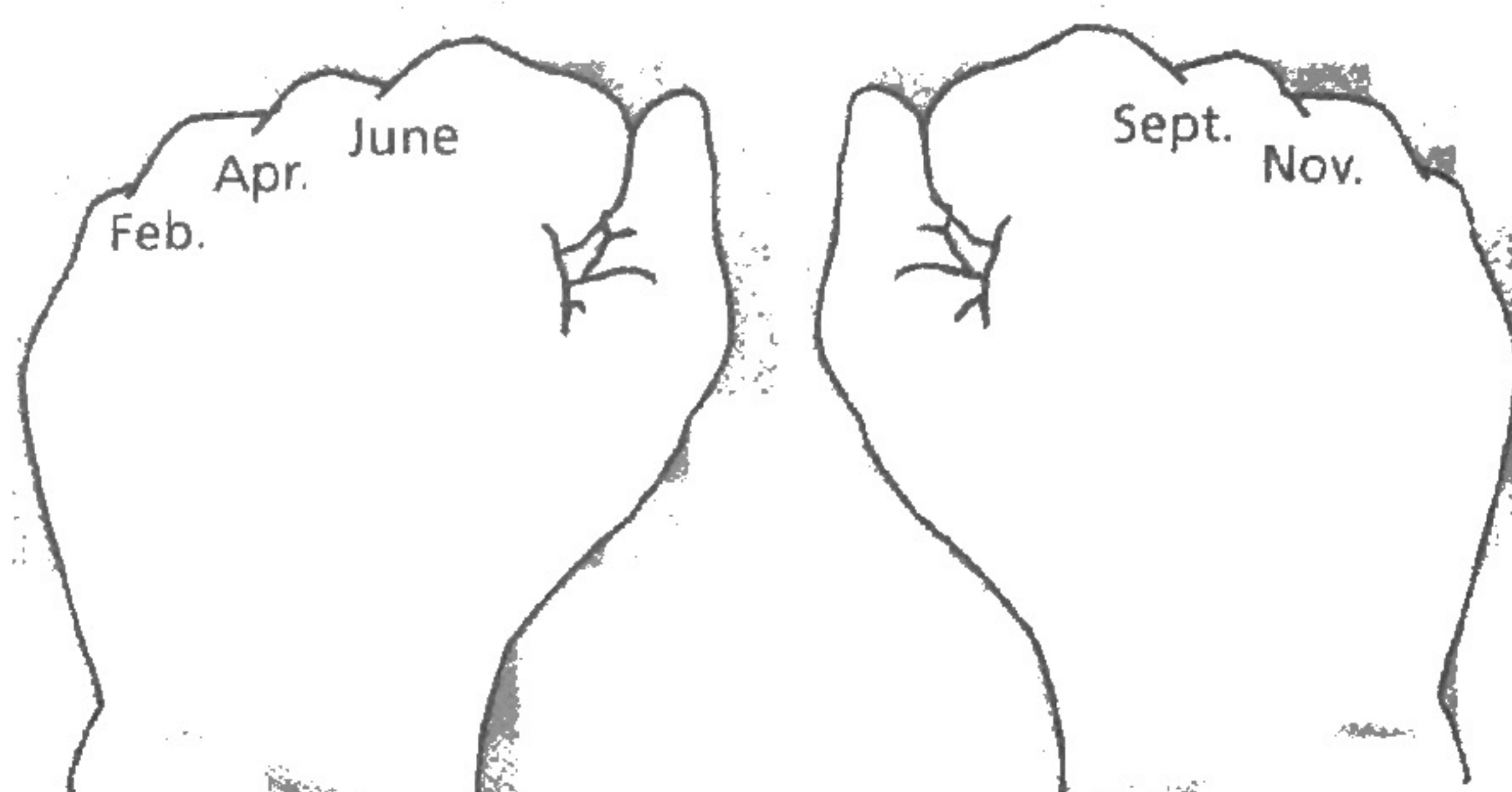
All Pro Sports Center purchases \$45,300 in baseball gloves from Spaulding on May 5. Spaulding allows 4/15, n/45. If All Pro sends a partial payment of \$20,000 on the discount date, how much credit will be given for the partial payment? What is the net amount still due on the order?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 226.

DETERMINING DISCOUNT DATE AND NET DATE BY USING VARIOUS TERMS OF SALE DATING METHODS

To determine the discount date and net date of an invoice, you must know how many days are in each month or use a calendar.

Following are two commonly used memory devices to help you remember how many days are in each month. Remember, in a leap year, February has 29 days. Leap years fall every four years. They are the only years evenly divisible by 4 and are the years of our next presidential elections (2012, 2016).



Another way to find these dates is to use the days-in-a-year calendar shown in Exhibit 7-6. In Chapter 10, you will be able to use this calendar again to find future dates and calculate the number of days of a loan.

STEPS TO FINDING A FUTURE DATE USING A DAYS-IN-A-YEAR CALENDAR

STEP 1. Find the “day number” of the starting date.

Note: In leap years, add 1 to the day numbers beginning with March 1.

STEP 2. Add the number of days of the discount or credit period to that day number.

Note: If the new day number is over 365, subtract 365. This means the future date is in the next year.

STEP 3. Find the date by looking up the new day number from Step 2.

EXAMPLE 11 FINDING THE NET DATE

If an invoice dated April 14 is due in 75 days, what is the net date?

SOLUTIONSTRATEGY

Step 1. From the calendar, April 14 is day number 104.

Step 2. $104 + 75 = 179$

Step 3. From the calendar, day number 179 is June 28.

TRYIT EXERCISE 11

If an invoice dated September 12 is due in 60 days, what is the net date?

CHECK YOUR ANSWER WITH THE SOLUTION ON PAGE 226.

EXHIBIT 7-6 Days-In-A-Year Calendar

Day of month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	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

During the next leap years, 2012 and 2016, add 1 to the day numbers beginning with March 1.

TERMS OF SALE—DATING METHODS

ORDINARY DATING

ordinary dating When the discount period and credit period start on the invoice date.

When the discount period and the credit period start on the date of the invoice, this is known as **ordinary dating**. It is the most common method of dating the terms of sale. The last day to take advantage of the cash discount, the discount date, is found by adding the number of days in the discount period to the date of the invoice. For example, to receive a cash discount, an invoice dated November 8 with terms of 2/10, n/30 should be paid no later than November 18 (November 8 + 10 days). The last day to pay the invoice, the net date, is found by adding the number of days in the credit period to the invoice date. With terms of 2/10, n/30, the net date would be December 8 (November 8 + 30 days). If the buyer does not pay the bill by the net date, the seller may impose a penalty charge for late payment.

EXAMPLE 12 USING ORDINARY DATING

AccuCare Pharmacy receives an invoice dated August 19 from Bristol Drug Wholesalers for merchandise. The terms of sale are 3/10, n/45. If AccuCare elects to take the cash discount, what is the discount date? If AccuCare does not take the cash discount, what is the net date?

SOLUTION STRATEGY

Find the discount date by adding the number of days in the discount period to the date of the invoice.

$$\text{Discount date} = \text{August 19} + 10 \text{ days} = \underline{\text{August 29}}$$

If the discount is not taken, find the net date by adding the number of days in the credit period to the invoice date.

$$\begin{aligned} \text{August 19} + 45 \text{ days} = & 12 \text{ days left in August } (31 - 19) \\ & + 30 \text{ days in September} \\ & + 3 \text{ days in October} \\ & \underline{45 \text{ days}} \end{aligned}$$

The net date, the 45th day, is October 3.

TRY IT EXERCISE 12

Great Impressions Printing buys ink and paper from a supplier. The invoice date of the purchase is June 11. If the terms of sale are 4/10, n/60, what are the discount date and the net date of the invoice?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 226.

EOM OR PROXIMO DATING

EOM dating, or end-of-month dating, means that the terms of sale start *after* the end of the month of the invoice. Another name for this dating method is **proximo**, or **prox**. Proximo means “in the following month.” For example, 2/10 EOM, or 2/10 proximo, means that a 2% cash discount will be allowed if the bill is paid 10 days after the *end of the month* of the invoice. This is the case for any invoice dated from the 1st to the 25th of a month. If an invoice is dated after the 25th of the month, the terms of sale begin *after* the end of the *following* month. Unless otherwise specified, the net amount is due 20 days after the discount date.

EOM dating End-of-month dating.

Depending on invoice date, terms of sale start at the end of the month of the invoice or the end of the following month.

proximo, or **prox** Another name for EOM dating. Means “in the following month.”

EXAMPLE 13 USING EOM DATING

As the shipping manager for World Imports, answer the following questions.

- What are the discount date and the net date of an invoice dated March 3 with terms of 3/15 EOM?
- What are the discount date and the net date of an invoice dated March 27 with terms of 3/15 EOM?

SOLUTION STRATEGY

- Because the invoice date is between the 1st and the 25th of the month, March 3, the discount date on terms of 3/15 EOM would be 15 days *after* the end of the month of the invoice. The net date would be 20 days later.

Discount date = 15 days after the end of March = April 15
Net date = April 15 + 20 days = May 5

- Because the invoice date is after the 25th of the month, March 27, the discount date on terms of 3/15 EOM would be 15 days *after* the end of the month *following* the invoice month. The net date would be 20 days later.

Discount date = 15 days after the end of April = May 15
Net date = May 15 + 20 days = June 4

TRY IT EXERCISE 13

As the accounts receivable manager for River Bend Industries, answer the following questions.

- What are the discount date and the net date of an invoice dated November 18 with terms of 3/15 EOM?
- What are the discount date and the net date of an invoice dated November 27 with terms of 3/15 EOM?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 226.

ROG DATING

Receipt of goods dating, or **ROG dating**, is a common method used when shipping times are long, such as with special or custom orders. When ROG dating is used, the terms of sale begin the day the goods are received at the buyer's location. With this method, the buyer does not have to pay for the merchandise before it arrives. An example would be 2/10 ROG. As usual, the net date is 20 days after the discount date.

ROG dating Receipt of goods dating
Terms of sale begin on the date the goods are received by the buyer.

EXAMPLE 14 USING ROG DATING

What are the discount date and the net date for an invoice dated June 23 if the shipment arrives on August 16 and the terms are 3/15 ROG?

SOLUTION STRATEGY

In this case, the discount period starts on August 16, the date the shipment arrives. The net date will be 20 days after the discount date.

Discount date = August 16 + 15 days = August 31

Net date = August 31 + 20 days = September 20

TRY IT EXERCISE 14

What are the discount date and the net date of an invoice dated October 11 if the shipment arrives on December 29 and the terms are 2/20 ROG?

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 226.

CHAPTER FORMULAS

The Invoice

$$\text{Extended total} = \text{Number of items} \times \text{Cost per item}$$

Trade Discounts—Single

$$\text{Trade discount} = \text{List price} \times \text{Trade discount rate}$$

$$\text{Net price} = \text{List price} - \text{Trade discount}$$

$$\text{Net price} = \text{List price}(100\% - \text{Trade discount rate})$$

$$\text{Trade discount rate} = \frac{\text{Trade discount}}{\text{List price}}$$

Trade Discounts—Series

$$\text{Net price} = \text{List price} \times \text{Net price factor}$$

$$\text{Single equivalent discount} = 1 - \text{Net price factor}$$

$$\text{Trade discount} = \text{List price} \times \text{Single equivalent discount}$$

Cash Discounts and Terms of Sale

$$\text{Net amount due} = \text{Net price}(100\% - \text{Cash discount rate})$$

$$\text{Partial payment credit} = \frac{\text{Partial payment}}{100\% - \text{Cash discount rate}}$$

$$\text{Net amount due} = \text{Net price} - \text{Partial payment credit}$$

CHAPTER SUMMARY

Section I: The Invoice

Topic	Important Concepts	Illustrative Examples															
Reading and Understanding the Parts of an Invoice Performance Objective 7-1, Page 192	Refer to Exhibits 7-1, 7-2, and 7-3.																
Extending and Totaling an Invoice Performance Objective 7-2, Page 195	$\text{Extended amount} =$ $\text{Number of items} \times \text{Cost per item}$ $\text{Invoice subtotal} =$ $\text{Total of extended amount column}$ $\text{Invoice total} =$ $\text{Invoice subtotal} + \text{Other charges}$	<p>The Great Subversion, a sandwich shop, ordered 25 lb of ham at \$3.69 per pound and 22 lb of cheese at \$4.25 per pound. There is a \$7.50 delivery charge. Extend each item and find the invoice subtotal and invoice total.</p> <table> <tr> <td>$25 \times 3.69 =$</td> <td>92.25</td> <td>Ham</td> </tr> <tr> <td>$22 \times 4.25 =$</td> <td>93.50</td> <td>Cheese</td> </tr> <tr> <td></td> <td>185.75</td> <td>Subtotal</td> </tr> <tr> <td></td> <td>+ 7.50</td> <td>Delivery</td> </tr> <tr> <td></td> <td><u>\$193.25</u></td> <td>Invoice total</td> </tr> </table>	$25 \times 3.69 =$	92.25	Ham	$22 \times 4.25 =$	93.50	Cheese		185.75	Subtotal		+ 7.50	Delivery		<u>\$193.25</u>	Invoice total
$25 \times 3.69 =$	92.25	Ham															
$22 \times 4.25 =$	93.50	Cheese															
	185.75	Subtotal															
	+ 7.50	Delivery															
	<u>\$193.25</u>	Invoice total															

Section II: Trade Discounts—Single

Topic	Important Concepts	Illustrative Examples
Calculating the Amount of a Single Trade Discount Performance Objective 7-3, Page 199	<p>Trade discounts are reductions from the manufacturer's list price given to businesses in the trade for the performance of various marketing functions.</p> $\text{Trade discount} =$ $\text{List price} \times \text{Trade discount rate}$	<p>Sunglass King ordered merchandise with a list price of \$12,700 from a manufacturer. Because it is in the trade, Sunglass King gets a 35% trade discount. What is the amount of the trade discount?</p> $\text{Trade discount} = 12,700 \times .35 = \$4,445$

Section III: Trade Discounts—Series

Calculating Net Price by Using the Net Price Factor, Complement Method

Performance Objective 7-4,
Page 199

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

Performance Objective 7-5,
Page 200

Important Concepts

Net price factor =
 $100\% - \text{Trade discount rate}$

Net price =
 $\text{List price}(100\% - \text{Trade discount rate})$

Trade discount rate = $\frac{\text{Trade discount}}{\text{List price}}$

Illustrative Examples

From the previous problem, use the net price factor to find the net price of the order for Sunglass King.

Net price = $12,700(100\% - 35\%)$
Net price = $12,700 \times .65 = \underline{\$8,255}$

Cycle World Bike Shop orders merchandise listing for \$5,300 from Schwinn. The net price of the order is \$3,200. What is the trade discount rate?

Trade discount = $5,300 - 3,200 = \$2,100$

Trade discount rate = $\frac{2,100}{5,300} = \underline{39.6\%}$

Section III: Trade Discounts—Series

Calculating Net Price and the Amount of a Trade Discount by Using a Series of Trade Discounts

Performance Objective 7-6,
Page 204

Important Concepts

Net price is found by taking each trade discount in the series from the succeeding net price until all discounts have been deducted.

Trade discount = $\text{List price} - \text{Net price}$

Illustrative Examples

An invoice with merchandise listing for \$4,700 was entitled to trade discounts of 20% and 15%. What is the net price and the amount of the trade discount?

$4,700 \times .20 = 940$
 $4,700 - 940 = 3,760$
 $3,760 \times .15 = 564$
 $3,760 - 564 = \underline{\$3,196}$ Net price
Trade discount = $4,700 - 3,196 = \underline{\$1,504}$

Calculating Net Price of a Series of Trade Discounts by Using the Net Price Factor, Complement Method

Performance Objective 7-7,
Page 205

Calculating the Amount of a Trade Discount by Using a Single Equivalent Discount

Performance Objective 7-8,
Page 206

Net price factor is found by subtracting each trade discount rate from 100% (complement) and multiplying these complements together.

Net price = $\text{List price} \times \text{Net price factor}$

Single equivalent discount =
 $1 - \text{Net price factor}$

Trade discount =
 $\text{List price} \times \text{Single equivalent discount}$

Use the net price factor method to verify your answer to the previous problem.

$\frac{100\%}{- 20\%} \times \frac{100\%}{- 15\%} = .80 \times .85 = .68$ Net price factor

Net price = $4,700 \times .68 = \underline{\$3,196}$

What is the single equivalent discount and the amount of the trade discount in the previous problem?

Use this to verify your trade discount answer.

Single equivalent discount = $1 - .68 = .32$
Trade discount = $4,700 \times .32 = \underline{\$1,504}$

Section IV: Cash Discounts and Terms of Sale

Calculating Cash Discounts and Net Amount Due

Performance Objective 7-9,
Page 211

Important Concepts

Terms of sale specify when an invoice must be paid and if a cash discount is offered. Cash discount is an extra discount offered by the seller as an incentive for early payment of an invoice.

Cash discount =
 $\text{Net price} \times \text{Cash discount rate}$

Net amount due =
 $\text{Net price} - \text{Cash discount}$

Illustrative Examples

Action Auto Parts orders merchandise for \$1,800, including \$100 in freight charges. Action gets a 3% cash discount. What is the amount of the cash discount and the net amount due?

$1,800 - 100 = 1,700$ Net price
Cash discount = $1,700 \times .03 = \underline{\$51}$
 $1,700 - 51 = 1,649$
 $\underline{\$1,749}$ Net amount due

Topic

Important Concepts

Illustrative Examples

Calculating Net Amount Due, with Credit Given for Partial Payment

Performance Objective 7-10,
Page 213
$$\text{Partial payment credit} = 100\% - \text{Cash discount rate}$$

$$\text{Net amount due} = \text{Net price} - \text{Partial payment credit}$$

Elite Fashions makes a partial payment of \$3,000 on an invoice of \$7,900. The terms of sale are 3/15, n/30. What is the amount of the partial payment credit, and how much does Elite Fashions still owe on the invoice?

$$\begin{aligned} \text{Part pmt credit} &= \frac{3,000}{100\% - 3\%} = \$3,092.78 \\ \text{Net amount due} &= 7,900.00 \\ &\quad - 3,092.78 \\ &= \$4,807.22 \end{aligned}$$

Determining Discount Date and Net Date by Using Various Terms of Sale Dating Methods

Performance Objective 7-11,
Page 214

Discount date: last date to take advantage of a cash discount

Net date: last date to pay an invoice without incurring a penalty charge

Ordinary Dating Method

Performance Objective 7-11,
Page 216

Ordinary dating: discount period and the credit period start on the date of the invoice

EOM or Proximo Dating Method

Performance Objective 7-11,
Page 216

EOM means end of month. It is a dating method in which the terms of sale start *after* the end of the month of the invoice.

If the invoice is dated after the 25th of the month, the terms of sale start *after* the end of the *following* month.

Unless otherwise specified, the net date is 20 days after the discount date.

Proximo, or prox, is another name for EOM dating. It means "in the following month."

Galaxy Jewelers receives an invoice for merchandise on March 12 with terms of 3/15, n/30. What are the discount date and the net date?

$$\begin{aligned} \text{Disc date} &= \text{March 12} + 15 \text{ days} = \text{March 27} \\ \text{Net date} &= \text{March 12} + 30 \text{ days} = \text{April 11} \end{aligned}$$

Majestic Cleaning Service buys supplies with terms of sale of 2/10, EOM. What are the discount date and the net date if the invoice date is

- May 5?
- May 27?
- May 5 invoice terms start *after* the end of May.

$$\text{Discount date} = \text{June 10}$$

$$\text{Net date} = \text{June 10} + 20 \text{ days} = \text{June 30}$$

- May 27 invoice terms start *after* the end of the *following* month, June:

$$\text{Discount date} = \text{July 10}$$

$$\text{Net date} = \text{July 10} + 20 \text{ days} = \text{July 30}$$

An invoice dated August 24 has terms of 3/10 ROG. If the merchandise arrives on October 1, what are the discount date and the net date?

$$\text{Disc date} = \text{October 1} + 10 \text{ days} = \text{October 11}$$

$$\text{Net date} = \text{October 11} + 20 \text{ days} = \text{October 31}$$

Sugar Pine Candy Company buys merchandise from a vendor with terms of 3/15, 60 Extra. The invoice is dated December 11. What are the discount date and the net date?

$$\begin{aligned} \text{Disc date} &= \text{December 11} + 75 \text{ days} \\ &= \text{February 24} \end{aligned}$$

$$\text{Net date} = \text{February 24} + 20 = \text{March 16}$$

ROG Dating Method

Performance Objective 7-11,
Page 217

ROG means receipt of goods. It is a dating method in which the terms of sale begin on the date the goods are received rather than the invoice date. This is used to accommodate long shipping times. Unless otherwise specified, the net date is 20 days after the discount date.

Extra Dating Method

Performance Objective 7-11,
Page 218

Extra, Ex, or X is a dating method in which the buyer receives an extra period of time before the terms of sale begin. Vendors use extra dating as an incentive to entice buyers to purchase out-of-season or slow-moving merchandise. Unless otherwise specified, the net date is 20 days after the discount date.

DOLLAR SENSE

The U.S. Department of Transportation's Maritime Administration has published a comprehensive "Glossary of Shipping Terms" that you may encounter in your business when dealing with shipping companies. This Glossary can be found at www.marad.dot.gov/documents/Glossary_final.pdf. Note: The G in Glossary is case-sensitive.

From the following Whole Grain Cereal Co. invoice, identify the indicated parts.

- | | | | |
|------------------------------------|-------|---------------------|-------|
| a. Seller | _____ | b. Invoice number | _____ |
| c. Invoice date | _____ | d. Customer order # | _____ |
| e. Buyer | _____ | f. Terms of sale | _____ |
| g. Shipping address | _____ | h. Salesperson | _____ |
| i. Shipped via | _____ | j. Insurance | _____ |
| k. Shipping charges | _____ | l. Invoice subtotal | _____ |
| m. Unit price—Fruit and Nut Flakes | _____ | n. Invoice total | _____ |

SOLUTIONSTRATEGY

- | | | | |
|------------------------------------|---------------------------------|---------------------|----------------------|
| a. Seller | <u>Organic Grain Cereal Co.</u> | b. Invoice number | <u>2112</u> |
| c. Invoice date | <u>August 19, 20XX</u> | d. Customer order # | <u>B-1623</u> |
| e. Buyer | <u>Kroger Supermarkets</u> | f. Terms of sale | <u>Net - 45 days</u> |
| g. Shipping address | <u>1424 Peachtree Rd</u> | h. Salesperson | <u>H. L. Mager</u> |
| i. Shipped via | <u>Terminal Transport</u> | j. Insurance | <u>\$33.00</u> |
| k. Shipping charges | <u>\$67.45</u> | l. Invoice subtotal | <u>\$2,227.05</u> |
| m. Unit price—Fruit and Nut Flakes | <u>\$19.34</u> | n. Invoice total | <u>\$2,327.50</u> |

INVOICE					
Organic Grain Cereal Co. 697 Canyon Road Boulder, CO 80304				No. 2112 INVOICE DATE August 19, 20XX CUSTOMER'S ORDER NO. B-1623	
SOLD TO: KROGER SUPERMARKETS 565 North Avenue Atlanta, Georgia 30348			SHIP TO: DISTRIBUTION CENTER 1424 Peachtree Road Atlanta, Georgia 30341		
SALESMAN H. L. Mager		SHIPPED VIA Terminal Transport		TERMS Net - 45 Days	
F.O.B. Boulder, CO					
QTY. ORDERED	QTY. SHIPPED	DESCRIPTION		UNIT	AMOUNT
55 cs.	55 cs.	Corn Crunchies	24 ounce	22.19	\$1220 45
28 cs.	28 cs.	Fruit and Nut Flakes	24 ounce	19.34	541 52
41 cs.	22 cs.	Rice and Wheat Flakes	16 ounce	21.14	465 08
				INVOICE SUBTOTAL	<u>2,227.05</u>
				SHIPPING CHARGES	<u>67.45</u>
				INSURANCE	<u>33.00</u>
				INVOICE TOTAL	<u>\$2,327.50</u>

TRYITEXERCISE 1

From the following FotoFair invoice, identify the indicated parts.

- | | | | |
|-----------------------------|-------|-------------------------|-------|
| a. Buyer | _____ | b. Invoice number | _____ |
| c. Invoice date | _____ | d. Amount—Pocket Pro 55 | _____ |
| e. Seller | _____ | f. Terms of sale | _____ |
| g. Shipping address | _____ | h. Salesperson | _____ |
| i. Shipped via | _____ | j. F.O.B. | _____ |
| k. Shipping charges | _____ | l. Invoice subtotal | _____ |
| m. Unit price—Pocket Pro 75 | _____ | n. Invoice total | _____ |

CHECK YOUR ANSWERS WITH THE SOLUTIONS ON PAGE 225.