Mathematics for Management

Chapter 8: Trade & Cash Discount

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Content:

❏8.0 Introduction

❏8.1 Trade Discount

❏8.2 Cash Discount

Expected Outcome:

Upon the completion of this course, students will have the ability to:

1. Calculate the list price and net price by using the formula

2. Solve the trade discount problem by identifying the single discount and chain discount

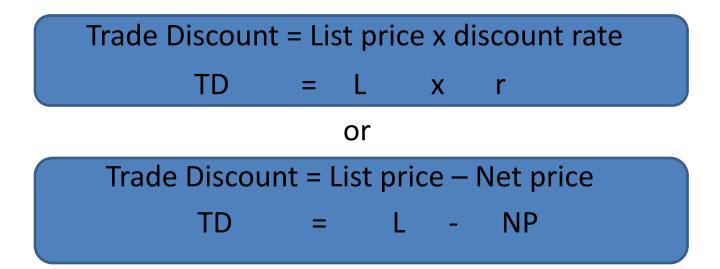3. Classify the trade and cash discount and solve the related problem.

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Trade Discount

What is trade discount?

- Reduction off the original selling price (list price) of an item

- Discount that you receive from the seller

- The difference between the list price and net price

- Trade discount is not related to early payment

Formula Trade Discount

Trade Discount = List price x discount rate

TD = L x r

or

Trade Discount = List price – Net price

TD = L - NP

Net price = List price – Trade discount

NP = L - Lr

NP = L (1-r)

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Types of Trade Discount

There are two types of trade discount:

Single Discount	Multiple Discount
Involve **only one** trade discount	Involve **more than one** trade discount

Multiple discount must be equivalent to single discount by using this formula:

$$r = 1 - (1-r_1)(1-r_2)(1-r_3)....(1-r_n)$$

r_n: depending on the numbers of trade discounts

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Example:

The selling price of an Aper smart phone is RM 2900. The manufacturer offers its dealers a 40% trade discount. What are the amount of trade discount and the net price?

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Solution:

Trade discount, TD = List price x Trade discount rate
$$= RM2900 \times 0.4$$
$$= RM1160$$

Net price, NP = L(1-r)
$$= RM2900 \ (1-0.4)$$
$$= RM1740$$

Example:

A shop has advertised a product at RM1500 and a series of discounts was given, less 20%, 10% and 5%. Find

(a) the single discount equivalent

(b) the net price

Solution:

(a) the single discount equivalent

$$r = 1 - (1-0.2)(1-0.1)(1-0.05)$$
$$= 0.316 \ @ \ 31.6\%$$

(b) the net price

$$NP = L(1-r)$$
$$= RM1500 \ (1-0.316)$$
$$= RM1026$$

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Exercises:

- The price after discount of a canvas bag is RM 180. With 30% trade discount rate is offered, find the list price of the bag?

- Aisyah paid RM 239.29 for a face powder which was offered a chain discount of 15% and 8%. Calculate the list price of the face powder?

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Cash Discount

What is cash discount?

- It is a type of discount that is given to the buyer if the buyer make the payment before the due date.

- Cash discount applied on the net price (deducting trade discount from the list price)

Formula Cash Discount

Net price = List price − Trade discount

$$NP = L(1-r)$$

Cash Discount = Net price x Cash discount rate (%)

$$CD = NP \times r$$

Net Payment = List price − Trade discount − Cash discount

$$= L - TD - CD$$

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Differences between trade discount & cash discount

Trade Discount	**Cash Discount**
Meaning : Discount allowed by the seller to the buyer in case of bulk purchase	**Meaning:** Reduction in the net amount when prompt payment (within a short period of time) is made by the buyer
Objective: To attract bigger orders and increase the sales	**Objective:** To encourage the buyer to make prompt payment

Example:

What is the meaning of these terms?

$$\frac{2}{20}, \frac{1}{30}, \frac{n}{30}$$

Solution:

This means that the customer will get **2% discount** if the invoice was paid **within 10 days** of the date of the invoice, **1%** may be deducted if the invoice was paid between **11th and 30th day** and full amount must be paid (**no discount**) **after 30th day**.

Example:

Date of invoice: Nov 18, 2002
Date of Goods Delivered: Nov 28, 2002
Date of Goods Received: Dec 12, 2002
Date of payment: Dec 24, 2002

Given terms: $\dfrac{5}{15}, \dfrac{2}{30}, \dfrac{n}{60}$

Invoice amount: RM5000

What is the amount of cash discount?

Solution:

18 Nov – 30 Nov = 12 days
1 Dec – 24 Dec = 24 days
                  36 days

Since the customer paid after 30th day, so no discount will be given.

$\therefore$ The amount of cash discount = RM5000

Exercises:

- An invoice dated 2 January 2015 with an amount of RM 4010 was offered cash discount terms of 1/10, n/30. If the invoice was paid on 11 January 2015, what was the net payment?

- A retailer received an invoice of RM 2,300 dated 10 April 2016. He was was offered cash discount terms of 3/10, 2/20, n/60. How much he needs to pay if he paid the invoice on 28 April 2016?

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THE END
~THANK YOU~

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