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Homework #4

1. **ITU Telecommunication Standardization Sector** (**ITU-T**) is one of the three sectors (divisions or units) of the [International Telecommunication Union](http://en.wikipedia.org/wiki/International_Telecommunication_Union) (ITU); it coordinates standards for [telecommunications](http://en.wikipedia.org/wiki/Telecommunications) known as [ITU-T Recommendations](http://www.itu.int/en/ITU-T/publications/Pages/recs.aspx) which act as defining elements in the global infrastructure of information and communication technologies (ICTs).

[**ITU-T**](http://en.wikipedia.org/wiki/ITU-T) **V-Series** Recommendations on Data communication over the telephone network specify the protocols that govern approved [modem](http://en.wikipedia.org/wiki/Modem) communication standards and interfaces

* V.1 is an ITU-T recommendation, entitled Equivalence between binary notation symbols and the significant conditions of a two-condition code.
* V.2 is an ITU-T recommendation, approved in November 1988, titled Power levels for data transmission over telephone lines.
* V.4 is an ITU-T recommendation, approved in November 1988, titled General structure of signals of International Alphabet No. 5 code for character oriented data transmission over public telephone networks.

1. **International Organization for Standardization** known as **ISO**, is an [international standard](http://en.wikipedia.org/wiki/International_standard)-setting body composed of representatives from various national [standards organizations](http://en.wikipedia.org/wiki/Standards_organizations). ISO International Standards ensure that products and services are safe, reliable and of good quality. For business, they are strategic tools that reduce costs by minimizing waste and errors, and increasing productivity. They help companies to access new markets, level the playing field for developing countries and facilitate free and fair global trade.
2. The **TM Forum** (formerly **TeleManagement Forum** and the **Network Management Forum**) is a non-profit [industry association](http://en.wikipedia.org/wiki/Industry_association), for [service providers](http://en.wikipedia.org/wiki/Service_provider) and their suppliers in the [telecommunications](http://en.wikipedia.org/wiki/Telecommunication) and [entertainment](http://en.wikipedia.org/wiki/Entertainment_industry) industries.
3. **Digital Subscriber Line Forum** is a consortium of more than 330 leading industry telecommunications, equipment, computing, networking and service provider companies, including incumbent and competitive carriers. Established in 1994, the Forum continues its drive for a mass market for DSL, to deliver the benefits of this technology to end users around the world over existing copper telephone wire infrastructures.
* TR-036 Requirement for Voice over DSL
1. **The Institute for Electrical and Electronic Engineering (IEEE)** is one of the leading [standards](http://en.wikipedia.org/wiki/Technical_standard)-making organizations in the world. IEEE performs its standards making and maintaining functions through the [IEEE Standards Association](http://en.wikipedia.org/wiki/IEEE_Standards_Association) (IEEE-SA). IEEE standards affect a wide range of industries including: power and energy, biomedical and healthcare, [Information Technology](http://en.wikipedia.org/wiki/Information_Technology) (IT), telecommunications, transportation, nanotechnology, information assurance, and many more. In 2013, IEEE had over 900 active standards, with over 500 standards under development. One of the more notable IEEE standards is the [IEEE 802](http://en.wikipedia.org/wiki/IEEE_802) [LAN](http://en.wikipedia.org/wiki/LAN)/[MAN](http://en.wikipedia.org/wiki/Metropolitan_area_network) group of standards which includes the [IEEE 802.3](http://en.wikipedia.org/wiki/IEEE_802.3) [Ethernet](http://en.wikipedia.org/wiki/Ethernet) standard and the [IEEE 802.11](http://en.wikipedia.org/wiki/IEEE_802.11) Wireless Networking standard.
* **IEEE 802.3** is a [working group](http://en.wikipedia.org/wiki/Working_group) and a collection of [IEEE](http://en.wikipedia.org/wiki/IEEE) standards produced by the working group defining the [physical layer](http://en.wikipedia.org/wiki/Physical_layer) and [data link layer](http://en.wikipedia.org/wiki/Data_link_layer)'s [media access control](http://en.wikipedia.org/wiki/Media_access_control) (MAC) of wired [Ethernet](http://en.wikipedia.org/wiki/Ethernet). This is generally a [local area network](http://en.wikipedia.org/wiki/Local_area_network) technology with some [wide area network](http://en.wikipedia.org/wiki/Wide_area_network) applications. Physical connections are made between nodes and/or infrastructure devices ([hubs](http://en.wikipedia.org/wiki/Network_hub), [switches](http://en.wikipedia.org/wiki/Network_switch), [routers](http://en.wikipedia.org/wiki/Router_%28computing%29)) by various types of copper or [fiber cable](http://en.wikipedia.org/wiki/Optical_fiber).
1. **Distributed Management Task Force** (**DMTF**, formerly "Desktop Management Task Force") is an industry organization that develops, maintains and promotes standards for [systems management](http://en.wikipedia.org/wiki/Systems_management) in enterprise IT environments. These standards allow for building systems management infrastructure components in a [platform](http://en.wikipedia.org/wiki/Platform_%28computing%29)-independent and technology-neutral way.
* **Cloud Infrastructure Management Interface** (**CIMI**) - CIMI is a self-service interface for infrastructure clouds, allowing users to dynamically provision, configure and administer their cloud usage with a high-level interface that greatly simplifies cloud systems management. The specification standardizes interactions between cloud environments to achieve interoperable cloud infrastructure management between service providers and their consumers and developers, enabling users to manage their cloud infrastructure use easily and without complexity.
* [**Common Information Model**](http://en.wikipedia.org/wiki/Common_Information_Model_%28computing%29) (**CIM**) – The CIM schema is a [conceptual schema](http://en.wikipedia.org/wiki/Conceptual_schema) that defines how the managed elements in an IT environment (for instance [computers](http://en.wikipedia.org/wiki/Computer) or [storage area networks](http://en.wikipedia.org/wiki/Storage_area_network)) are represented as a common set of [objects](http://en.wikipedia.org/wiki/Object_%28computer_science%29) and relationships between them. CIM is extensible in order to allow product specific extensions to the common definition of these managed elements. CIM uses a model based upon [UML](http://en.wikipedia.org/wiki/Unified_Modeling_Language) to define the CIM Schema. CIM is the basis for most of the other DMTF standards.
* [**Common Diagnostic Model**](http://en.wikipedia.org/wiki/Common_Diagnostic_Model) (**CDM**) – The CDM schema is a part of the CIM schema that defines how system diagnostics should be incorporated into the management infrastructure.
1. The **Internet Engineering Task Force** (**IETF**) develops and promotes [Internet standards](http://en.wikipedia.org/wiki/Internet_standard), cooperating closely with the [W3C](http://en.wikipedia.org/wiki/World_Wide_Web_Consortium) and [ISO](http://en.wikipedia.org/wiki/International_Organization_for_Standardization)/[IEC](http://en.wikipedia.org/wiki/International_Electrotechnical_Commission) standards bodies and dealing in particular with standards of the [Internet protocol suite](http://en.wikipedia.org/wiki/Internet_protocol_suite) (TCP/IP).

**2-40)** A company is analyzing a make-versus-purchase situation for a component used in several products, and the engineering department has developed these data:

Option *A***:** Purchase 10,000 items per year at a fixed price of $8.50 per item. The cost of placing the order is negligible according to the present cost accounting procedure.

Option *B***:** Manufacture 10,000 items per year, using available capacity in the factory. Cost estimates are direct materials = $5.00 per item and direct labor = $1.50 per item. Manufacturing overhead is allocated at 200% of direct labor (= $3.00 per item).

Based on these data, should the item be purchased or manufactured? The company should purchase because option B will cost more then option A.

Option A: $10,000\*\$8.50 fixed price=\$85,000$

Option B: $10,000\*\left(\$5.00 materials+\$1.50 direct labor+\$3.00 overhead\right)=\$95,000$