CMA Students Newsletter (For Foundation Students)

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# Paper 1: Fundamentals of Economics and Management (FEM)

## EMPLOYEE COMMUNICATION

### Meaning

The word communication comes from the Latin word 'Communis' which means 'common'. This suggests that communication is the act of imparting a common idea or understanding to another person and covers any behaviour that affect an exchange of meaning. By using this bridge of meaning a person can safely cross the river of misunderstanding that separates all people.

Communication is an art. It is here where you win or lose a friend. After conversing with Gladstone and Disraeli, Madam Ezabella remarked. "When Gladstone talked to me I felt that he was the most important person in England. But when Disraeli spoke to me is made me feel that I was the most important person in England."

### Purpose of Communication

Communication is very important to the functioning and survival of the organisation. Chester Barnard Shaw defines Communication as the very first function of a manager—one that linked people and purpose together in any co-operative system, from recruitment to retirement. The need for effective communication is paramount. Some important purposes which it serves are as under.

1. Communication is needed in the recruitment process to persuade potential employees of the merits of working for the enterprise. The recruit is told about the company's organisation structure, policies and practices.
2. Communication is needed in the area of orientation to make people acquainted with peers, superiors and with company's rules and regulations.
3. Considerable information is needed by every employee to be able to perform his function effectively. He needs to know his job's relationship and importance to the overall operation. This knowledge makes easy for

the employee to identify with organisational mission. If a nurse in a hospital knows why she is to follow certain procedures with a patient and how this relates to the total therapy programme for him. it is much easier for her to develop an ideological commitment to the hospital.

4. Communication is needed to acquaint the subordinate with the evaluation of his contribution to enterprise activity. It is a matter of some motivational importance for the subordinate to know from his superior how he stands and what the future may holds for him. This appraisal, if intelligently carried out, boosts the subordinate's morale and helps him in building his career.
5. Communication is needed to teach employees about personnel safety on the job. This is essential to reduce accidents, to lower compensation and legal costs and to decrease recruitment and training costs for replacement.
6. Communication is of vital importance in projecting the image of an enterprise in the society. The amount of support which an enterprise receives from its social event is affected by the information which elite groups and wider public have acquired about its goals, activities & accomplishment.
7. Communication helps the manager in his decision process. There is a spate of varied info produced in enterprises. The manager must make a choice of useful and essential info, which should reach him. The important question before him is "what do I need to know"? It should be remembered that no two successive managers of the same plant will give the same answer to this question.

In sum, it can be said that the purpose of communication are:

(i) To provide information and understanding necessary for group effort (i.e. the skill to work); and.

(ii) To provide the attitude necessary for motivation, co-operation and job satisfaction (i.e. the will to work).

**Process of Communication**

According to David K. Berlo, the whole sequence of A communicating with B (called communication process) involves six steps:

**Ideation → Encoding → Transmission → Receiving → Decoding → Acting.**

At stage I, we see a sender who has a certain idea or content of communication. In the second stage he changes this content into a code which may be anything written or spoken words, symbols, gestures, etc. Having encoded his ideas he now transmits them on a certain channel which he thinks is free of barriers of interference, for e.g. a worker while sending us a request for pay-hike may decide to bypass his unhelping superintendent or may wait for the good mood of his superior. This is stage 3. In stage 4, the message reaches on other party. Fifth stage is decoding. Each person decodes message according to his attitudes towards the message and towards the sender. He ordinarily filters out those parts of the message which the decoding equipment cannot cope with. This means that he cannot completely step outside himself psychologically nor can be totally step inside the sender. Therefore, the message that he receives or the meanings that he takes is not exactly what the sender intended. Finally, the receiver acts or responds in some way. Where possible, it is desirable to give feedback to the sender so that two-way communication is established.

**Directions of Communication Flow**

In a flow corporate structure the direction of the information flow can follow the authority pattern of the hierarchical position or can ascend the hierarchical ladder or can move among peers at the same organisational level downward communication.

It is the flow of information from the higher levels of the organisation to lower levels. Downward communication is usually used for five basic purposes. These are : to give specific job instructions, to bring about understanding of the work and its relationship to other organisational tasks, to provide information about procedures and practices, to provide feedback to the subordinate about his performance and to provide information of an ideological character to inculcate a sense of mission in the subordinate.

There can be several media of downward communication, such as written orders, posters and bulletin boards. Company periodicals and handbooks, information racks, loud-speakers, grapevine, annual reports group meetings and the labour union. Of all these, orders are the most frequent.

Order may be communicated either verbally or in writing. According to Bruce Yuill, oral orders may be of three types: The command, the request and the implied order. A command order seems appropriate when issued to prevent or stop a particular act on the part of a subordinate. This may be legitimate when a person is damaging materials or equipment or is carrying on the task in the wrong way.

The command order is much less appropriate for the purpose of getting work done. A mare sophisticated type of order to be used for this purpose is a request order. The usual format of a request order goes something like this: "Mr. I would weather you would care to do so and so." This type of order reduces the resistance of the recipients in the minimum. They are asked in a courteous fashion and are not ordered as inferiors to do the bidding of their superior. The dignity of the human being is safeguarded.

The implied order is best when those who give order know the attitudes and habits of the receivers. The implied order is given when stable social relations exist in a work group. The implied order can be contained in a cover between the given and the recipient. It may arise out of discussion about a particular problem. The giver finally summing up the conclusions reached with a comment such as: "Well, we will do that." The 'We' is used in such a way as to mean the recipient of the order goes ahead and implements the acts necessary to complete the tasks.

Written orders are appropriate when:

(i) An operator is dull or forgetful.

(ii) There is geographical distance between the order given and its recipient.

(iii) Precise figures or complicated details are involved.

(iv) The sequence of operations is important and needs to be followed exactly.

(v) It is desired to maintain strict accountability. Some characterstics of good orders are as follow:

(a) Orders should follow the chain of command.

(b) Important orders should be confirmed in writing even though given verbally;

(c) The feasibility of orders must be considered before issuing them. An order to manufacture parts within standard tolerances may not be practicable because the machines are worn out:

(d) Orders should be clear and complete. Orders that cannot be understood can have IK, authority, orders needing interpretation and reinterpretation are generally disregarded, and

(e) Tone of orders should simulate ready acceptance, it should be courteous.

Mary Parkers Follett lays down the following principles to be followed in giving orders.

1. Attitudes necessary for the carrying out of an order should be prepared in advance. People will obey an order only if it appeals to their habit pattern. They cannot go contrary to then life-long habits. Therefore, below giving orders it should be considered how to form the habits which will ensure their execution.

2. Face-to-face suggestions should be preferred to long distance orders.
3. Order should be depersonalised and made an integral part of the given situation so that the question of someone giving and someone receiving does not come up. Both accept the order giving by the situation. The managers are as much sincere to order as the workers, for both obey the law of the situation.

**Barriers in Downward Communication**

When a subordinate refuses to carry out an orders or when he does not carry out an order to the required expectations of his superior, these are certainly some barriers which are making the downward communication ineffective. For e.g. it may be that the message is wrongly cast, that the objective off the orders is not clearly stated or that the recipient has insufficient knowledge as skills to carry out the order. It may also be an indication that the recipient is emotionally upset for some reason. It may be that the superior is mentally ill which leads to an aggressive or even distorted attitude which is naturally resented by his subordinate. It is quite possible that the superior may not motivate the employee sufficiently so that an adequate level of performance is reached. To take corrective action the superior must identify these barriers.

Some important barriers are as follows:

1. Badly expressed messages, e.g. lack of contact. poor organisation of ideas, inadequate vocabulary etc.
2. Faulty translations, words and actions have several meanings and can be wrongly by the subordinates.
3. Distrust of the superior when a superior communicates. The subordinates are not listening to his words or reading his message. They are primarily assessing his action first only if they find the superior can be trusted in reference to his past action, will the subordinates care to the take note of the present communications, otherwise, no matters what the content of the messages are nothing shall register in the minds of the subordinates; on the contrary, the message may evoke decision. Subordinates of an executive who is noted for countermanding or modifying his message gradually become conditioned to delay action or to act enthusiastically.
4. Withholding of information by the superior because he feels that the subordinates may have it.
5. In attention of the subordinates.
6. Loss by transmission and poor retention. As levels increase more and more omission & misinterpretations occur in the transmission of information down the scalar chain.
7. Insufficient time given to the subordinate to think through the full meaning of a message.
8. Difference in experience and background. An employee who has experienced retrenchment in his earlier employment may see a throat in everything he sees or hears. He sees a new employee, or notices newly installed equipment and he may jump to the conclusion that he is going to be laid off.
9. Physical barriers. There are environmental factors which prevent or reduce the sending or receiving of communication. They include physical distance, distracting noises, and similar interferences.

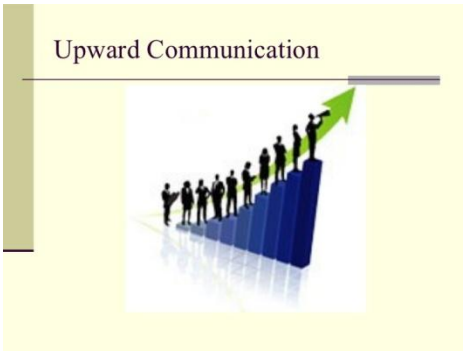
How to make downward communication effective? Some specific suggestions to make downward communication effective are as under.

1. A superior must possess more knowledge about facts than what he wants to communicate to his subordinates. His span of knowledge must be greater than his span of communication. Receive of knowledge is necessary to answer unexpected question from the subordinates.

2. A superior must tell to his employees not only what he thinks is good but also what they think is good for them. Information should be tailored to their needs.
3. There should be a communication plan determining what to tell, when to tell, and how to tell. The advance knowledge about the media and areas of communication reduces anxiety and embarrassment of workers.
4. The superior should gain the confidence of his subordinates. In fact, confidence and communications are interdependent.
5. The choice in words and style should fit the language level and ability of subordinate.
6. The superior should learn to empathise with his subordinates. To empathise means to lay arise one's own feelings and to understand the subordinates from their point of view.
7. Over-communication should be avoided information should be transmitted in small units.
8. Subordinates should be given opportunity to provide feedback.

**Upward communication**

Upward communication is the flow of information from lower level (subordinates) to the higher levels (management). Through these channels subordinates can communicate to their - superiors about themselves, their performance and their problems, about organisational practices and policies and about what needs to be done and how it can be done.




There can be several media of up communication, such as face-to-face contacts group meetings, grievance procedure, a complaint system, morale questionnaries, letter to the editor of the company's periodical, counselling, exit, interview, an open door policy, the labour union, labour spices and the grapevine.

**Barriers in Upward Communication**

Some barriers to effective upward communication are as follows:

1. **Concealment of their feelings by the subordinate:** Various studies have revealed the subordinates generally conceal their true opinion, ideas and problems from their superiors. A Vogel in his study of 2000 employees in 8 companies has found that a majority of employees feel that they would get into trouble if they speak up to their superiors and that the best way to gain promotion is to agree with them.
2. **The belief that management is not interested in employee problems:** There is common feeling among many supervisors that any criticism from their subordinates if transmitted upward will make their own superiors angry. They, therefore, shut out such inputs from below. This gives subordinates the feelings that management does not care about them.
3. **Differences in experiences and background** : If the new supervisor had a raw deal in his last employment at the hands of the workmen, even the common courtesies shown by his new team may evoke the opposite reaction and worries.
4. **Stereotypes and beliefs:** For the most part we do not first see, then define, we define first (according to our stereotypes and beliefs), and then see. A group of workmen found laughing together by their supervisor may evoke any of the following reactions depending upon the supervisor's own stereotypes and beliefs: If he

believes in theory X that all workers stick labour, he may crack with a vengeance. If he believes in theory Y, he may congratulate himself for having happy and hard-working workmen. If he feels insecure and inadequate, he may conclude that the workmen are laughing at him.

5. **Status differentials in general:** The larger the differences between the status of the superior and the subordinate, the more restricted would be the flow of upward communication. Status is defined as the "total attributes that rank and relate individual in the organisation". Each person's status in the organisation depends on who, what and where he is in the organisation. The difference in status creates a social distance which stifles upward communication.
6. **Language or semantic difference:** Differences in vocabulary exist among people from differ geographic regions, age group, socio-economic groups and occupational specialities. For e.g. there is a define vocabulary gulf between college-educated managers and non-college educated subordinates.
7. **Filtering:** Sometimes a message is filtered because transmission of the original message may mean admission of one's failure.
8. **Timing:** Sometimes incorrect timing also acts as barriers.

**How to make upward communication effective?**

Suggestions to make the upward communication effective are as under:

1. The superior should genuinely follow on "open-door" policy. The true test of an open door policy is whether the superior behind the door has an open mind and whether his employees are psychologically free to enter.
2. There should be a grievance system in the organisation to serve as a means to resolve differences and to redress wrongs, both actual and imaginary.
3. Informal recreational events like picnics, sports "and parties should be arranged to provide an opportunity to the subordinates for unplanned upward communication which is not the primary purpose of these events but which is an important by-products of them.
4. The superior should speak less and listen more. The nature has given him two ears but only one tongue. Nine commandment for good listening are: Stop talking, put the talker at ease (permissive envt), show him that you want to listen (do not doodle tap or shuffle papers), empathise with him, be patient (do not start for the door and walk away), hold your temper, go easy on argument and criticism, and ask questions.
5. Subordinates should be encouraged to write letters to the superior, some space can be reserved in the employees' magazine called 'house organ', usually published by many organisation, for clearing rumours or for printing letters received from the workers.

**Horizontal communications:**

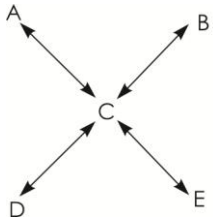
Horizontal communication is the communication between members of different work groups at the same organisation level. The objects of this communication are : (a) to bring about task coordination among peers and (b) to furnish emotional and social support to the individual on the principle that people in the same boat share the same problems.

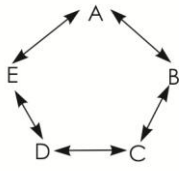
Major barriers to horizontal communication are inter-departmental rivalries, incorrect grouping of activities, inter-personal conflict and indifference toward organisational goals.

**Basic Characteristics of Communication Networks:**

All communication network posses some basic characteristics which differentiate them from each other. These are as follows:

1. **Size of network:** The size of network is measured in terms of the number of employees it interconnects. Some communication networks are very big, others are small, in general, the larger the loop, the greater are the problems of communications. However, large loops with several interconnecting communication links have been found to be more effective where problems are more complex and ambiguous.
2. **Extent of modification taking place in the message:** In some communication network the same original message flow through all the stages without modification but in some others a change in the message occurs as it passes through different links. The first pattern has the advantage of uniformity. Everyone in the network is exposed to identical information Nonetheless the uniformity to this pattern may be advantageous only for simple problem, for complex matters a message may need to be modified at different stages according to the needs of the people.
3. **Feedback or closure:** Communication networks also differ from each other in the way in which their communication cycles close. In some networks the cycle closes as the receiver of the message acknowledges its receipt and accepts it. But in some others the cycle does not close because the receiver does not accept the message but attempt to alert it.
4. **Communication pattern:** Communication networks also differ from each other in the extent to which they are concentrated or decentralised. Two broad categories of their pattern are the star and the circle. In the star pattern one group members play a key role in the transmission of information among the other group members. In the circle pattern no single group member plays dominant role in controlling the communication. Considerable research has been conducted to determine the most effective patterns of communication within an organisation. Experiments conducted in laboratory situation have attempted to measure the difference in group performance, speed and accuracy when various communication patterns are used. The studies show that group whose problems require the collation of information from the members work faster and more accurately with the centralised leader. But morale and Flexibility to change are better in groups of the circle type where all members have more than one source of information. The results of these researches are summarised in the following table:




**EFFECT OF COMMUNICATION PATTERN**

| | Effect | Communication star | Pattern |
|---|---|---|---|
| 1. | Speed of performance | Very fast | Slow |
| 2. | Accuracy | Good | Poor |
| 3. | Morale | Very poor | Very high |
| 4. | Emergence of leadership | Very strong | None |
| 5. | Flexibility to change | Slow | Very fast |

**Checks on in-plant communications:**

Communication occupies a major portion of the manager's time and attention. Much of his time and effort may be wasted, for it is possible that many communication practices are quite ineffective and that others are less useful than is assumed. For this reason, current communication policy often proposes to check on communication programmes and to examine each of three phases: transmission, media, and reception. The tests generally used for this purpose are: (1) morale studies, (2) evaluation of reading, ease and interest, and (3) communication audits.

**Morale studies:** Questionnaire surveys of employee's opinions usually include a communication dimension or sub-scale. They may ask for detailed reactions to particular practices and media. 'Respondents' answers and comments provide valuable evidence and how they view upward and horizontal communication and what they see as desirable supplements to current practice.

**Evaluation of reading ease and interest**: One approach to evaluate of communication seeks to classify written materials such as employee handbooks be read and the interest which they evoke. Two principal techniques used to measure reading ease are the Robert Crunning technique: (known as "Fog Index") and the Rudolph Flesch technique under the second technique, reading ease is correlated with the length of words and sentences.

**Communication audits:** These audits generally seek to measure the information known to various groups of managers and employee and compare this information with what has been made available to them. One more purpose of these audits may be to make a content analysis of employee publications and to discover who reads them and what features attract greatest interest and approval.

**Communication in Indian Industries:**

In almost are enterprises in the public sector and in a great many in private sector only a secondary place has been given to communication with employees. Some of the existing problems are as follow.

1. Management dictates to employees too much and listens too little.
2. Too little of what is communicated is understood.
3. Too much of the content of communication is what management is concerned about; too little is of concern to workers.
4. Too much propaganda is communicated.
5. Communication bears too little relation to the possibility of change.

While this is the position of downward communication, upward communication which has to flow against the steam of the authority is even poorer. In a study of giant sized departmentally-managed public sector organisation it was found that very few upward communications are made on such vital matters are poor work performances. unfavourable reactions to other, unfavourable opinions and attitudes of workers, and breach of procedure in doing a work. The percentage of subordinates claiming to communicate this information upward is very normal (less than 10%). It is only in respect of favourable work performance and problem relating to work that more than 75% of the subordinates usually communicate to their superiors. Nine percent of messages transmitted by subordinates get lost in transit. There also the loss is particularly of those messages which are in respect of unfavourable reports, attitudes and criticisms. Upward communication of unfavourable reports is usually delayed. Distortion and manipulation of information takes places primarily in upward communication of reports about practices not followed properly.

**Informal communication (Grapevine):**

Another communication system which coexists with an organisation's formal communication system is the informal communication system called the grapevine. Grapevine arises from social interaction. Whenever people congregate into groups, the grapevine is sure to develop. Some typical situations in which grapevine communication becomes very active are as follow:

(i) **Excitement and insecurity:** Informal communication among groups and people become very active during periods of excitements and insecurity. Examples are a layoff or the installation of a computer in the office.

(ii) **Involvement of friends and associates:** People also are active on the grapevine when their friends and work associates are involved. This means that if Hari is to be promoted or David Fired, employees need to know the full story as soon as possible, if they are not informed. They will fill in the gaps with their own conclusions, that is, people fill in missing signals according to their own perception.

(iii) **Recent information:** People also are most active on the grapevine when they have news, as distinguished from stale information. The greatest spreading of information happens immediately after it is known, so it is important to give out the right story in the beginning.

(iv) **Procedure that brings people into contact:** The grapevine when they have news, by observation so procedure that regurlary bring people into contact or work that allows conservation of job that provides information desired by others will encourage people to be active on the grapevine. For example, one study showed that secretaries to managers were four times more likely to be key grapevine communications compared with other employees.

(v) **Personality of communicator:** Some employees are more active on the grapevine for personality reasons. Perhaps they like to talk about people, have a strong interest in what is happening in their organisation, or have special communication abilities.

**Features of Grapevine**

1. The grapevine gives managers much feedback about employees and their jobs. It also helps interpret management to the workers; it especially helps translate management's formal orders into employees' languages, in this way making up for any management failures in communications. In several instances the grapevine carries information that the formal system does not wish to carry and purposely leaves unsaid. For example, a supervisor who is in a bad mood because of personal or job problems usually cannot announce this fact officially to employees. The better approach is to "put it on the grapevine" so that employees are fare warned informally not to make requests that can be delayed. Now often it is said, "Do not talk to the manager about to raiser today".

2. The grapevine has a fast pace. It spreads information faster than most management communication system. Its speed makes it quite difficult for management to stop undesirable rumours or to release significant news in time to prevent rumour formation.

3. The grapevine has the usual ability to penetrate even the tightest company security screen because of its capacity to cut across organisational times and ideal directly with the people who know. The grapevine is well known as a source of confidential information.

4. One undesirable characteristic of grapevine is its function as a carrier of rumour. The best approach in dealing with rumour is to get at its causes. Researchers have shown that rumour is a product of interest and ambiguity in a situation. If a person has no interest in a situation, he has no cause to rumour about it. Similarly, if there is no ambiguity in a situation, a person has no cause for rumour.

Rumour should be suppressed as early as possible because research shows that once a rumour's general theme is known and accepted; employees distort future happenings to conform to the rumour. Thus, if employees accept the story that there are plans to shift the office to a new building. Every minor change thereafter will be interpreted as confirmation of that story (even, for example, when an electrician comes to repair a plug.)

Rumours are stopped by supplying the facts to the people. The factors should be given directly without first mentioning the rumour, because research suggests that when a rumour is repeated at this time, some people will hear it instead of the repudiation. They then assume that the rumour has been confirmed. Dependable informal leaders can help management in stopping a rumour, if true facts are shared with them as soon as possible.

# Paper 2: Fundamentals of Accounting (FOA)

## COST SHEET

- A Cost Sheet is a statement which shows the break-up of cost,
- It is a document which provides for the assembly of the detailed cost of a cost centre or a cost unit.

### Contents of Cost Sheet

**A Cost sheet shows:**

(a) Different components of Total Cost (Say Primary cost, Factory cost, Cost of Goods produced)
(b) Total Cost
(c) Cost Per Unit
(d) Previous year's figures or Budgeted figures or Standard figures to facilitate comparison if the management so desires.
(e) Other information which may be incorporated into a cost sheet in accordance with the requirements of the business are:
- Name of the product, cost centre or cost unit
- Period to which the statement relates
- Output for the period
- Details of various components of total cost
- Item-wise cost per unit
- Changes in stock position
- Cost of goods sold
- Profit or loss position

### Periodicity

- Cost Sheet may be prepared weekly, monthly, quarterly, half-yearly or yearly.

### Uses of Cost Sheet

**The Cost Sheet serves the following purposes:**

- It helps in ascertaining the total cost, the different components of total cost, and cost per unit of output.
- It helps in fixing selling prices or quotations.
- It facilitates the comparison of actual costs with the standard costs, of actual costs of one period with that of another period.
- It helps in controlling the costs.
- It helps in the preparation of estimates for submission of tenders.

**Cost Sheet is prepared on the basis of:**

- **Historical Cost Sheet**
- **Estimated Cost Sheet**

- **Historical Cost Sheet:** Cost Sheet prepared or the basis of actual costs after the actual costs have been incurred is called Historical Cost Sheet.
- **Estimated Cost Sheet**: Cost sheet prepared on the basis of estimated costs before the actual commencement of production, is called Estimated Cost Sheet.

**Format of Cost Sheet**

| Particulars | Amount | Amount |
|---|---|---|
| Opening Stock of Raw Material | xxx | xxx |
| **Add:** Cost of Raw materials (CAS 6) | xxx | xxx |
| **Less:** Closing stock of Raw Materials | xxx | xxx |
| Raw Materials Consumed | xxx | xxx |
| Direct Wages (Labour) (CAS 7) | xxx | xxx |
| Direct Expenses (CAS 10) | xxx | xxx |
| **Prime Cost** | **xxx** | **xxx** |
| **Add:** Factory Overheads:- | | |
| Indirect Material | xxx | xxx |
| Indirect Wages | xxx | xxx |
| Indirect Expenses | xxx | xxx |
| Depreciation & Amortization (CAS 16) | xxx | xxx |
| Repairs & Maintenance (CAS 12) | xxx | xxx |
| Work Cost Incurred | xxx | xxx |
| **Add:** Opening Stock of WIP | xxx | xxx |
| **Less:** Closing Stock of WIP | xxx | xxx |
| **Work Cost** | **xxx** | **xxx** |
| **Add:** Administration Overheads:- (CAS 11) | xxx | xxx |

| | | |
|---|---|---|
| Office Rent | xxx | xxx |
| Depreciation | xxx | xxx |
| General Charges | xxx | xxx |
| Audit Fees | xxx | xxx |
| Bank Charges | xxx | xxx |
| Other Office Expenses | xxx | xxx |
| **Cost of Production** | **xxx** | **xxx** |
| **Add:** Opening stock of Finished Goods | xxx | xxx |
| **Less:** Closing stock of Finished Goods | xxx | xxx |
| **Cost of Goods Sold** | **xxx** | **xxx** |
| **Add:** Selling and Distribution Overheads:- (CAS 15) | xxx | xxx |
| Salesman Commission | xxx | xxx |
| Salesman salary | xxx | xxx |
| Travelling Expenses | xxx | xxx |
| Advertisement | xxx | xxx |
| Delivery man Expenses | xxx | xxx |
| Sales Tax | xxx | xxx |
| **Cost of Sales** | **xxx** | **xxx** |
| Profit (balancing figure) | xxx | xxx |
| **Sales** | **xxx** | **xxx** |

**Notes:-**

- **Factory Over Heads are recovered as a percentage of direct wages**
- **Administration Over Heads, Selling and Distribution Overheads are recovered as a percentage of Works cost.**

**Example: 1 Calculate Prime Cost from the following particulars for a product unit.**

| Cost Items | Amount (₹) |
|---|---|
| **Stock as on 1.1.2014** | |
| **Raw Materials** | **25,000** |
| **Work-in-progress (at Prime Cost)** | **30,000** |
| **Raw Materials Purchased** | **2,00,000** |
| **Freight on Raw Materials** | **10,000** |
| **Chargeable Expenses** | **50,000** |
| **Factory Wages for direct labour** | **2,70,000** |
| **Stock as on 31st December, 2014** | |
| **Raw Materials** | **45,000** |
| **Work-in-Progress (at prime cost)** | **45,000** |

**Answer:**

**Statement showing the Prime Cost**

| Cost Items | Amount (₹) | Amount (₹) |
|---|---|---|
| Raw Material Consumed | | |
| Opening Stock | 25,000 | |
| Purchases | 2,00,000 | |

| | | |
|---|---|---|
| Freight on Purchases | 10,000 | |
| | 2,35,000 | |
| **Less:** Closing Stock | (45,000) | 1,90,000 |
| Factory Wages | | 2,70,000 |
| Chargeable Expenses | | 50,000 |
| | | 5,10,000 |
| **Adjustment for Work-in-progress (at prime cost)** | | |
| Opening | 30,000 | |
| Closing | (45,000) | (15,000) |
| **Prime Cost** | | 4,95,000 |

**Example: 2 From the following information calculate the Work Cost:**

| Cost Items | Amount (₹) |
|---|---|
| **Direct Material** | **80,000** |
| **Direct Labour** | **22,000** |
| **Direct Expenses** | **5,000** |
| **Factory Overheads** | **15,000** |
| **Work-in-progress: (at factory cost)** | |
| **Opening Stock** | **13,000** |
| **Closing Stock** | **8,000** |

**Answer:**

**Statement showing the Prime Cost**

| Cost Items | Amount (₹) |
|---|---|
| Direct Material: Material Consumed | 80,000 |
| Direct Labour | 22,000 |
| Direct Expenses | 5,000 |
| **Prime Cost** | **1,07,000** |
| Factory Overheads | 15,000 |
| **Factory Cost (Gross)** | **1,22,000** |
| **Add:** Opening Stock of Work-in-progress | 13,000 |
| | 1,35,000 |
| **Less:** Closing Stock of Work-in-progress | 8,000 |
| **Work or Factory Cost (Net)** | **1,27,000** |

**Example: 3**

| From the following information calculate the total cost of production | (₹) |
|---|---|
| **Direct material** | **90,000** |
| **Direct labour** | **32,000** |
| **Direct expenses** | **9,000** |
| **Factory overheads** | **25,000** |
| **Office and administration overheads** | **20,000** |

**Answer:**

| Statement showing total cost of production | |
|---|---|
| **Details** | **Amount (₹)** |
| Direct Material: Material Consumed | 90,000 |
| Direct Labour: Productive wages | 32,000 |
| Direct Expenses | 9,000 |
| Prime Cost | 1,31,000 |
| Factory overheads | 25,000 |
| Factory Cost | 1,56,000 |
| **Office and administration overheads** | **20,000** |
| **Total Cost of Production** | **1,76,000** |

**Example:4**

| **From the following information calculate the total cost.** | **(₹)** |
|---|---|
| **Direct material** | **1,50,000** |
| **Direct Labour** | **50,000** |
| **Direct Expenses** | **20,000** |
| **Factory overheads** | **40,000** |
| **Office & administration overheads** | **30,000** |
| **Selling & distribution overheads** | **25,000** |

**Answer:**

| **Statement showing total cost** | **(₹)** |
|---|---|
| Direct material | 1,50,000 |
| Direct Labour | 50,000 |
| Direct Expenses | 20,000 |
| Prime Cost | 2,20,00 |
| Factory overheads | 40,000 |
| Factory Cost | 2,60,000 |
| Office & administration overheads | 30,000 |
| Total Cost of Production | 2,90,000 |
| Selling & distribution overheads | 25,000 |
| **Total Cost = Cost of sales** | **3,15,000** |

**Example: 5**

**Cost is 10,000 and profit on cost 10%. Calculate the total value of Sales.**

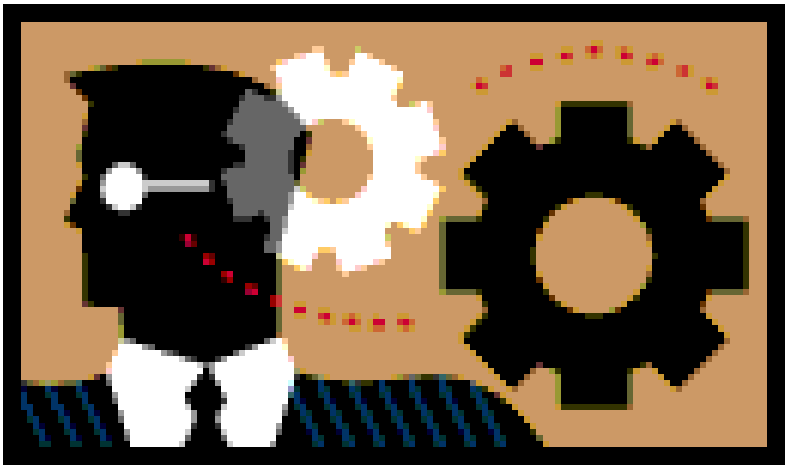
**Answer:**

Cost is ₹10,000 and profit on cost 10%. Assume the cost is ₹100 and profit on cost is ₹10.
Hence Profit on cost of ₹10,000 is
=10,000 × 10/100 = ₹1,000
Thus the sales value is ₹11000 (10,000 + 1000)

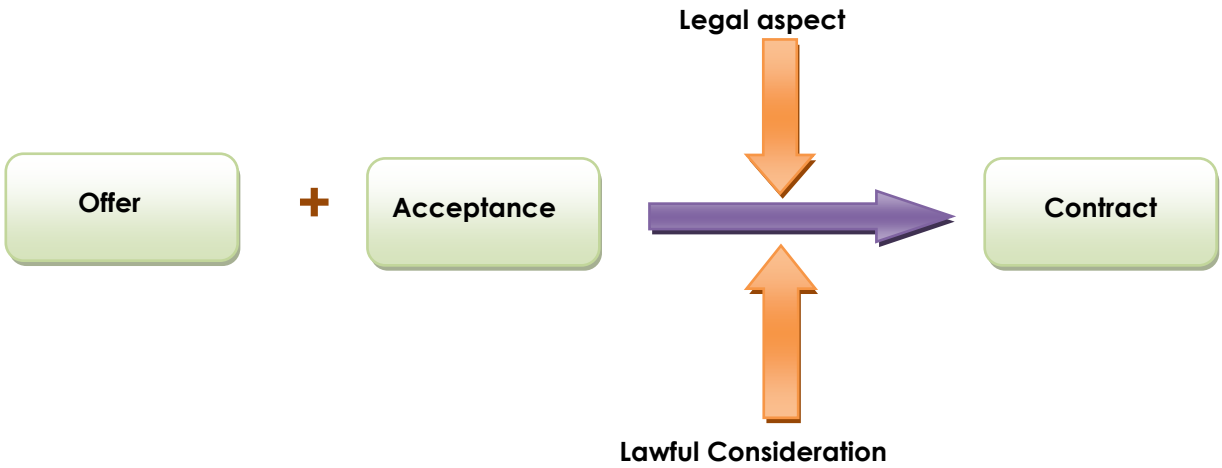
# Paper 3: Fundamentals of Laws and Ethics (FLE)

## Offer & Acceptance

[The Indian Contract Act 1872]



**Contract**



**Essentials of a Valid Contract**

- Offer and acceptance
- Genuine assent (Free Consent)
- Legality
- Consideration
- Capacity
- Writing

- **What distinguishes a contract from other agreements?**
  -Contracts are enforceable by law.
- **What two actions are necessary to form an agreement which may result in a contract?**
  -An offer and an acceptance

## Offer & Acceptance

**Offeror –** one who makes the offer

**Offeree –** the one whom it is made to.

Terms must be definite and accepted without change by the party to whom it was intended to be offered.

Without offer and acceptance the courts would not have an agreement that could be enforced.

## Offer

**An Offer is:**

An expression of willingness to contract on certain terms, made with the intention that it shall become binding as soon as it is accepted by the person to whom it is addressed.

Offers require **verbal** or **written** acceptance (forming what are known as bilateral contracts), with the general offers the performance of some act may be valid acceptance (forming a unilateral contract)

**An offer may be:**

- **Express** – either verbal or written, or
- **Implied** – from conduct or circumstances. Sometimes, nothing is said at all but an offer is obvious from the actions.

### Requirements of an Offer

- Offer must be communicated to the offeree
- There must be a common intention
- There should be a reference to the legal relations between parties.
- Terms must be complete and defined clearly
- Preliminary negotiations should be done to avoid cross offer.
- Conditions if any must be clearly indicated.

### Termination of an Offer

- Refusal
- Death of the either of party
- Lapse of the time duration
- Failure of the pre – conditions mentioned/ applied
- Revocation of
- Acceptance of offer entering into contract

## Acceptance 2(b)

This will normally mean that the offer is no longer available to anyone else.

**Offer can be defined as:**

Once the offeree signifies his approval unconditionally, proposal is said to be accepted.

Aproposal once accepted becomes a proposal.

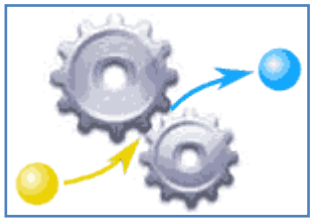
### Rules of Acceptance

- Communication of acceptance
- Acceptance must be absolute and unqualified
- Acceptance of a proposal with the terms and conditions mentioned and implied
- Need not be expressed in words always
- Ignorance of a proposal, is no acceptance
- Acceptance must be given within a reasonable time.
- Acceptance must be given before lapse or revocation or withdrawal.

# Paper 4: Fundamentals of Business Mathematics and Statistics (FBMS)

## What is a Function?

### A function relates an input to an output.



It is like a machine that has an input and an output.

And the output is related somehow to the input.

| | |
|---|---|
| **f(x)** | "**f(x) = ...** " is the classic way of writing a function. And there are other ways, as you will see! |

### Input, Relationship, Output

We will see many ways to think about functions, but there are always three main parts:

- The input
- The relationship
- The output

**Example:** "Multiply by 2" is a very simple function.
Here are the three parts:

| Input | Relationship | Output |
|---|---|---|
| 0 | × 2 | 0 |
| 1 | × 2 | 2 |
| 7 | × 2 | 14 |
| 10 | × 2 | 20 |
| ... | ... | ... |

For an input of 50, what is the output?

Some Examples of Functions

- $x^2$ (squaring) is a function
- $x^3+1$ is also a function
- Sine, Cosine and Tangent are functions used in trigonometry
- and there are lots more!

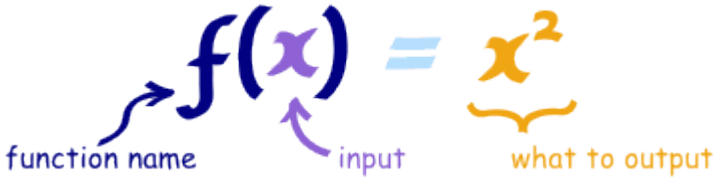
But we are not going to look at specific functions ...
... instead we will look at the **general idea** of a function.

## Names

First, it is useful to give a function a **name**.

The most common name is "***f***", but we can have other names like "***g***" ... or even "***marmalade***" if we want.

But let's use "f":




We say "*f of x equals x squared*"

what goes **into** the function is put inside parentheses () after the name of the function:

So ***f(x)*** shows us the function is called "***f***", and "**x**" goes **in**

And we usually see what a function does with the input:

***f(x)* = x²** shows us that function "***f***" takes "**x**" and squares it.

**Example:** with **f(x) = x²**:

- an input of 4
- becomes an output of 16.

In fact we can write **f(4) = 16**.

## The "x" is Just a Place-Holder!

Don't get too concerned about "x", it is just there to show us where the input goes and what happens to it.

It could be anything!

So this function:

$$f(x) = 1 - x + x^2$$

Is the same function as:

- $f(q) = 1 - q + q^2$
- $h(A) = 1 - A + A^2$
- $w(\theta) = 1 - \theta + \theta^2$

The variable (x, q, A, etc) is just there so we know where to put the values:

$$f(\mathbf{2}) = 1 - \mathbf{2} + \mathbf{2}^2 = 3$$

## Sometimes There is No Function Name

Sometimes a function has no name, and we see something like:

$$y = x^2$$

**But there is still:**

- an input (x)
- a relationship (squaring)
- and an output (y)

## Relating

At the top we said that a function was **like** a machine. But a function doesn't really have belts or cogs or any moving parts - and it doesn't actually destroy what we put into it!

A function ***relates*** an input to an output.

Saying "**f(4) = 16**" is like saying 4 is somehow related to 16. Or 4 → 16

**Example:** this tree grows 20 cm every year, so the height of the tree is ***related*** to its age using the function ***h***:

$$h(\text{age}) = \text{age} \times 20$$

So, if the age is 10 years, the height is:

$$h(10) = 10 \times 20 = 200 \text{ cm}$$

**Here are some example values:**

| age | $h(\text{age}) = \text{age} \times 20$ |
|---|---|
| 0 | 0 |
| 1 | 20 |
| 3.2 | 64 |
| 15 | 300 |
| ... | ... |

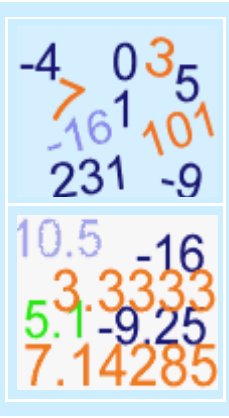
## What Types of Things Do Functions Process?

*"Numbers"* seems an obvious answer, but ...

... **which** numbers?
For example, the tree-height function ***h*(age) = age×20** makes no sense for an age less than zero.

... it could also be letters ("A"→"B"), or ID codes ("A6309"→"Pass") or stranger things.

So we need something **more powerful**, and that is where sets come in:




A set is a collection of things.

Here are some examples:

Set of even numbers: {..., -4, -2, 0, 2, 4, ...}

Set of clothes: {"hat","shirt",...}

Set of prime numbers: {2, 3, 5, 7, 11, 13, 17, ...}

Positive multiples of 3 that are less than 10: {3, 6, 9}

Each individual **thing in the set** (such as "4" or "hat") is called a **member**, or **element**.

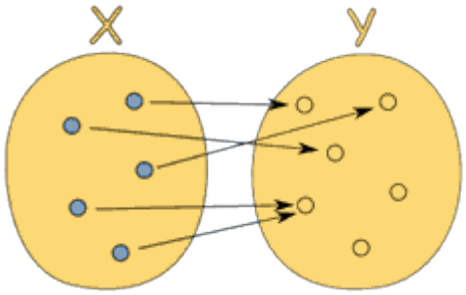
So, a function takes **elements of a set**, and gives back **elements of a set**.

## A Function is Special

But a function has **special rules**:

- It must work for **every** possible input value
- And it has only **one relationship** for each input value

This can be said in one definition:




### Formal Definition of a Function

A function relates **each element** of a set

with **exactly one** element of another set

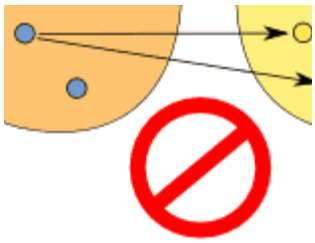
(possibly the same set).

## The Two Important Things!

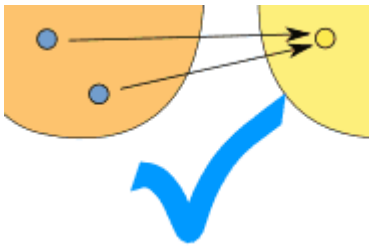
1. "...each element..." means that every element in **X** is related to some element in **Y**.
   We say that the function ***covers* X** (relates every element of it).
   (But some elements of **Y** might not be related to at all, which is fine.)
2. "...exactly one..." means that a function is ***single valued***. It will not give back 2 or more results for the same input.

**So "f(2) = 7 or 9" is not right!**

**Note:** "One-to-many" is **not** allowed, but "many-to-one" is allowed:



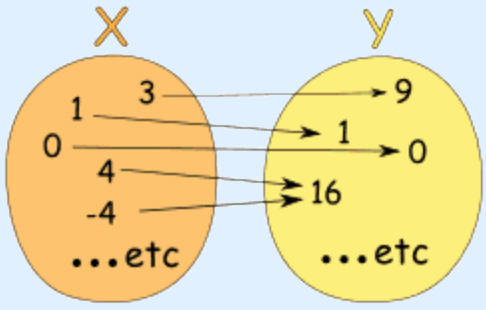
(one-to-many)
This is **NOT** OK in a function



(many-to-one)
But this **is** OK in a function

When a relationship does **not** follow those two rules then it is **not a function** ... it is still a **relationship**, just not a function.

**Example: The relationship $x \rightarrow x^2$**




**Could also be written as a table:**

| X: x | Y: $x^2$ |
|---|---|
| 3 | 9 |
| 1 | 1 |
| 0 | 0 |
| 4 | 16 |
| -4 | 16 |
| ... | ... |

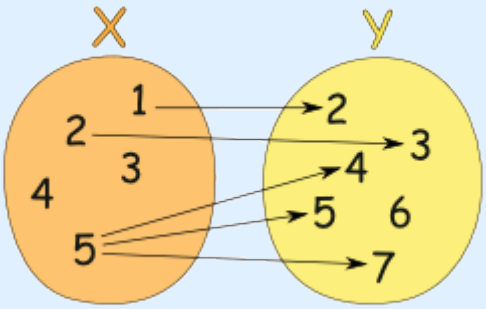
**It is a function**, because:

- Every element in X is related to Y
- No element in X has two or more relationships

So it follows the rules.

(Notice how both **4** and **-4** relate to **16**, which is allowed.)

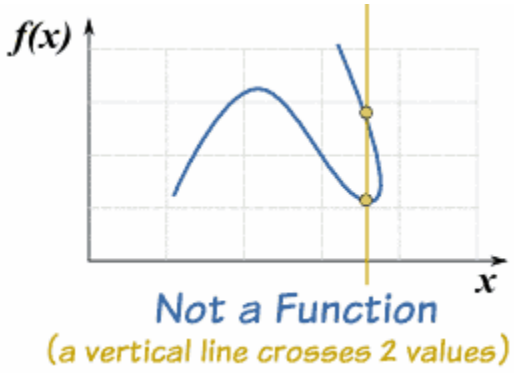
**Example: This relationship is not a function:**




It is a **relationship**, but it is **not a function**, for these reasons:

- Value "3" in X has no relation in Y
- Value "4" in X has no relation in Y
- Value "5" is related to more than one value in Y

(But the fact that "6" in Y has no relationship does not matter)




**Vertical Line Test**

On a graph, the idea of **single valued** means that no vertical line ever crosses more than one value.

If it **crosses more than once** it is still a valid curve, but is **not a function**.

Some types of functions have stricter rules, to find out more you can read

**Injective, Surjective and Bijective**

## Infinitely Many

My examples have just a few values, but functions usually work on sets with infinitely many elements.

**Example: $y = x^3$**

- The input set "X" is all Real Numbers
- The output set "Y" is also all the Real Numbers

We can't show ALL the values, so here are just a few examples:

| X: x | Y: $x^3$ |
|---|---|
| -2 | -8 |
| -0.1 | -0.001 |
| 0 | 0 |
| 1.1 | 1.331 |
| 3 | 27 |
| and so on... | and so on... |

## Domain, Codomain and Range

In our examples above

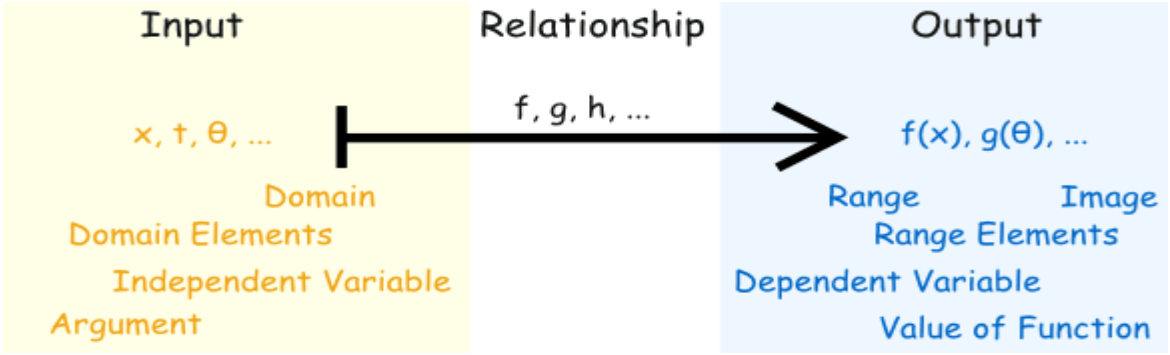
- the set "X" is called the **Domain**,
- the set "Y" is called the **Codomain**, and
- the set of elements that get pointed to in Y (the actual values produced by the function) is called the **Range**.

We have a special page on Domain, Range and Codomain if you want to know more.

## So Many Names!

Functions have been used in mathematics for a very long time, and lots of different names and ways of writing functions have come about.

Here are some common terms you should get familiar with:



**Example:** with **$z = 2u^3$**:

- "u" could be called the "independent variable"
- "z" could be called the "dependent variable" (it **depends on** the value of u)

**Example:** with **f(4) = 16**:

- "4" could be called the "argument"
- "16" could be called the "value of the function"

## Ordered Pairs

And here is another way to think about functions:

Write the input and output of a function as an "ordered pair", such as (4,16).

They are called **ordered** pairs because the input always comes first, and the output second:

(input, output)

So it looks like this:

( **x**, **f(x)** )

**Example:**

**(4,16)** means that the function takes in "4" and gives out "16"

### Set of Ordered Pairs

A function can then be defined as a **set** of ordered pairs:

**Example: {(2,4), (3,5), (7,3)}** is a function that says

"2 is related to 4", "3 is related to 5" and "7 is related 3".

Also, notice that:

- the domain is **{2,3,7}** (the input values)
- and the range is **{4,5,3}** (the output values)

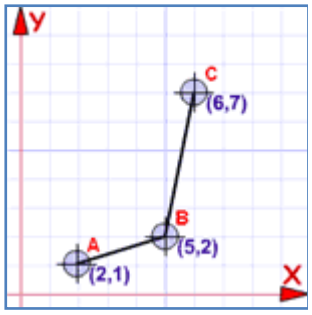
But the function has to be **single valued**, so we also say

"if it contains (a, b) and (a, c), then b must equal c"

Which is just a way of saying that an input of "a" cannot produce two different results.

**Example:** {(**2**,**4**), (**2**,**5**), (7,3)} is **not** a function because {2,4} and {2,5} means that 2 could be related to 4 **or** 5.

In other words it is not a function because it is **not single valued**




### A Benefit of Ordered Pairs

We can graph them...

... because they are also coordinates!

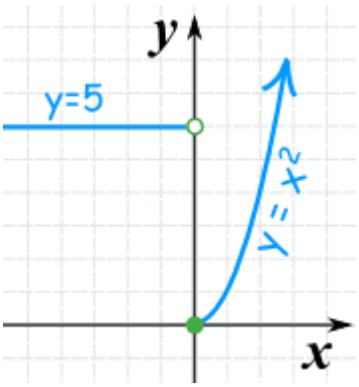
So a set of coordinates is also a function (if they follow the rules above, that is)

## A Function Can be in Pieces

We can create functions that behave differently depending on the input value

**Example:** A function with two pieces:

- when x is less than 0, it gives 5,
- when x is 0 or more it gives $x^2$




Here are some example values:

| x | y |
|---|---|
| -3 | 5 |
| -1 | 5 |
| 0 | 0 |
| 2 | 4 |
| 4 | 16 |
| ... | ... |

Read more at Piecewise Functions.

## Explicit vs Implicit

One last topic: the terms "explicit" and "implicit".

"Explicit" is when the function shows us how to go directly from x to y, such as:

$$y = x^3 - 3$$

When we know x, we can find y

That is the classic y = f(x) style.

"**Implicit**" is when it is **not** given directly such as:

$$x^2 - 3xy + y^3 = 0$$

When we know x, how do we find y?

It may be hard (or impossible!) to go directly from x to y.

"Implicit" comes from "implied", in other words shown **indirectly**.

## Graphing

- The Function Grapher can only handle explicit functions,
- The Equation Grapher can handle both types (but takes a little longer, and sometimes gets it wrong).

## Conclusion

- a function **relates** inputs to outputs
- a function takes elements from a set (the **domain**) and relates them to elements in a set (the **codomain**).
- all the outputs (the actual values related to) are together called the **range**
- a function is a **special** type of relation where:
  - **every element** in the domain is included, and
  - any input produces **only one output** (not this **or** that)
- an input and its matching output are together called an ordered pair
- so a function can also be seen as a **set of ordered pairs**