



The Association for Overseas Technical Cooperation and Sustainable Partnerships
30-1, Senju-azuma 1-chome, Adachi-ku, Tokyo 120-8534

Tel: 81-3-3888-8256 Fax: 81-3-3888-8242 E-mail: shouhei-au@aots.jp URL: <http://www.aots.jp/>

ODA Program

October 2024

Program Outline
&
Participation Requirements
of
The Program for Quality Problem Solving
[PQPS]

5 – 18 March 2025

1. BACKGROUND OF THE PROGRAMS:

The Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS) is an organization for human resources development mainly in overseas countries to promote technical cooperation through training, experts dispatch and other programs. Through those programs, we aim at contributing to the mutual economic growth of developing countries and Japan as well as enhancing friendly relations among those countries.

AOTS was established in 1959 with the support of the Ministry of International Trade and Industry (which is the present Ministry of Economy, Trade and Industry: METI) as Japan's first technical cooperation organization on a private sector basis. More than 200,000 individuals from 198 countries and regions have undergone our training in Japan, while the cumulative attendance at our overseas programs till the end of fiscal 2022 exceeded 230,000.

AOTS organizes and develops a various range of training courses based on requests from returning participants and industry in developing countries.

The Program for Quality Problem Solving (PQPS) is one of the management training courses which is conducted by the Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS). This program is designed for all the developing countries to learn business management/administration techniques and their underlying ways of thinking, all of which are characteristics of Japanese companies. It also aims to strengthen and improve the problem-solving abilities of managers of companies in developing countries, with a view to improving quality.

2. COUNTRY:

Please refer to “[Appendix 4] List of Target Countries and Regions” of this program outline.

Those who reside in the countries listed in the table and are recommended by AOTS's Overseas Collaborative Organization or able to apply from a Japanese company located in Japan may apply.

3. NUMBER OF PARTICIPANTS:

23 participants

4. PARTICIPATION REQUIREMENTS:

- (1) Participants should be, in principle, managers/supervisors or engineers who wish to acquire practical knowledge of techniques for improving quality and resolving important problems.
- (2) Participants should have, in principle, three years or more of business experience. It is preferable that participants are between 25 and 45 years of age.
- (3) Participants should have a sufficient working knowledge of English.
- (4) Participants should be university graduates and/or have equivalent professional experience.
- (5) Participants should be healthy enough to undergo an intensive training program in Japan.
- (6) Participants should be residing in the developing countries and/or regions.
- (7) Participants should not be students or armed forces personnel.
- (8) Former participants of the subsidized training programs in Japan organized by AOTS are not entitled to apply for any program which starts within six months (183 days) after they have returned home countries from Japan.

Notes:

- (1) Participants shall attend all the events in the curriculum provided for each management training program.
- (2) Family members or business partners (colleagues/subordinates of the participant's company) are not allowed to accompany participants on their journey in Japan.

- (3) Participants shall not request AOTS to arrange, nor arrange by themselves, any additional programs, and shall leave Japan and return to their home countries soon after the completion of the program.

Preferential Selection:

- (1) Participants from Japanese companies, business partners of Japanese companies, companies planning to deal with Japanese companies are most desirable. (In the case of applications from Japanese companies, business partners of Japanese companies, companies planning to deal with Japanese companies, the priority for selection becomes higher.)
- (2) In the case of applications from non- Japanese affiliated companies that do not have any business relations with Japanese companies, the priority for selection becomes lower.
- (3) In addition, applications from companies with capital from developed countries will be given lower priority in the selection process than applications from local companies that hold local capital.
- (4) Those who work in the national government (agency) or the local government (agency) have lower priority to participate in this training programs, since the programs are mainly targeted at the people working in the companies/organizations in the private sector.
- (4) The number of participants from the same host company in Japan or the same sending company from overseas may be limited if there are more applicants than AOTS can accept.

5. OUTLINE OF THE PROGRAM:

- OBJECTIVES

- (1) Through lectures and case studies focusing on practical understanding, the program seeks to ensure that participants master approaches to the ways of utilizing QC problem-solving methods, which are indispensable as a basis of TQM.
- (2) The program seeks to ensure that participants improve their own ability to resolve quality problems in their workplaces.
- (3) The program aims to improve the ability of participants to lead and promote problem-solving activities in their workplaces.

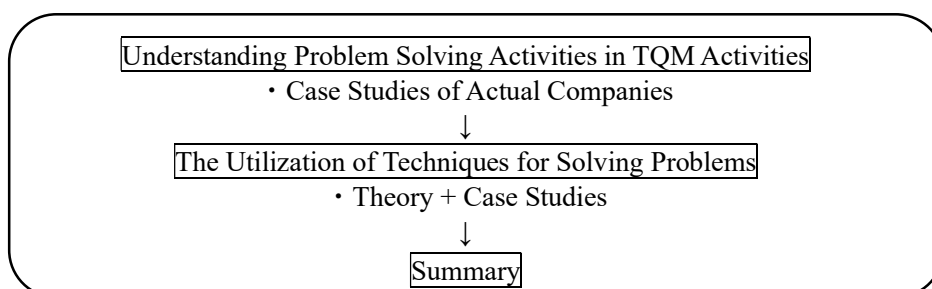
- CONTENTS

To achieve the above-mentioned aims, in this program participants will study the following contents after studying the theory behind QC problem-solving methods.

- (1) Theoretical lectures and many practices about useful techniques and methods for each steps in problem-solving.
- (2) Combined exercises of techniques and methods for advanced problem-solving.
- (3) Actual experience of problem-solving steps through exercises using actual case studies.

As one of the characteristics of this program, in each exercise participants can receive careful, detailed guidance from a number of lecturers. Moreover, participants will visit Japanese companies that are practicing excellent quality activities, to learn about examples of those activities. Furthermore, a special lecture will be delivered by Dr. Kano, who is the most prominent figures in the TQM field, and this will give participants a wider view of the theme.

This curriculum focuses on “What should I do and how should I do it?”, based on the positions of both managers and staff involved in the promotion of TQM and quality management, so it can be put into practice immediately after participants return to their home countries.



The course will usually consist of three hours in the morning and three hours in the afternoon. Group Discussion may take place in the evening. Please see the Tentative Schedule for further details.

- DURATION

Wednesday 5 March – Tuesday 18 March 2024 (2 weeks)

- LANGUAGE

All lectures, discussions, and company visits and exercises will be conducted in English or Japanese with translation into English. In principle, the program documents and training materials will be prepared in English.

- PROGRAM DIRECTOR

Dr. Masaaki Kaneko

Professor, Department of Management Systems Engineering/Department of Information and Telecommunication Engineering, School of Information and Telecommunication Engineering, Tokai University
Member of the Deming Prize Committee
General Affairs Committee Chair / the Management Technology Subcommittee Chair, the Japanese Society for Quality Control (JSQC)

Dr. Masaaki Kaneko has been engaged in his research at universities, specialized in Quality Control and TQM, after completing his doctorate degree at the Graduate School of Science and Engineering at Waseda University. He has won the Research Recognition Award by the Japanese Society for Quality Control (JSQC) four times, and the Best Paper Award by the Asian Network for Quality (ANQ) three times. He also serves as the General Affairs Committee Chair and the Management Technology Subcommittee Chair of the JSQC. In addition, he acts as a lecturer at seminars held by the Union of Japanese Scientists and Engineers (JUSE), and he has won the BC Annual Campaign, which is awarded to lecturers who have received particularly high evaluations, in 2005 and from 2015 to 2023 in succession. He was also awarded the 2015 Nikkei QC Literature Prize for a collective-writing book, "QMS Approaches for Medical Care Quality to be Assured by Organizations."

Dr. Masataka Sano

Professor, Department of Business Administration, Faculty of Commerce, Takushoku University
Member of the Deming Prize Committee
Auditor, the Japanese Society for Quality Control (JSQC)

Dr. Masataka Sano completed his doctorate at Waseda University Graduate School. He is a Doctor of Engineering. After working at Waseda University, Tokyo University of Science, and Chiba Institute of Technology, he took up his current position. His research interests include total quality management (TQM, method development, and feeling quality), and quality assurance in the medical and clinical testing fields (prevention of medical accidents, medical care in disasters, and ISO 15189). At AOTS, he was involved in various training programs related to quality management, including PQPS, and was also in charge of training programs conducted overseas.

- COURSE PLANNING COMMITTEE

Dr. Kazuyuki Suzuki	Professor Emeritus/Specially Appointed Professor, Graduate School of Informatics and Engineering Departments, the University of Electro-Communications
Dr. Tomomichi Suzuki	Professor, Department of Industrial and Systems Engineering, Faculty of Science and Technology, Tokyo University of Science
Dr. Satoko Tsuru	Specially Appointed Professor, Organization for Interdisciplinary Research Projects, the University of Tokyo
Mr. Yoshihisa Matsuda	Registered Consulting Engineer (Management Engineering)
Dr. Masahiko Munechika	Professor, Department of Industrial and Management Systems Engineering, School of Creative Science and Engineering, Waseda University

- TRAINING LOCATION AND ACCOMMODATION

AOTS Tokyo Kenshu Center (TKC) <may change in consideration of various factors>

<http://www.aots.jp/jp/center/about/tkc.html>

30-1, Senju-Azuma 1-chome, Adachi-ku, Tokyo 120-8534, Japan

Tel: 81-3-3888-8231 (Reception) Fax: 81-3-3888-0763

Tentative Schedule
of
The Program for Quality Problem Solving [PQPS]
 5 March – 18 March 2025 AOTS Tokyo Kenshu Center (TKC) <To Be Determined>

Date	Morning Session		Afternoon Session	Evening
4 Mar. (Tue.)	(Arrival in Japan)			
5 (Wed.)	Orientation/ Opening Ceremony	LECTURE: Course Overview/ Introduction to TQM The Importance of Problem Solving Activities	LECTURE & EXERCISE: -Approaches to and Ways of Implementing Problem Solving	
6 (Thu.)	LECTURE & EXERCISE: "Observation" and Techniques - Check Sheets and Pareto Diagrams		LECTURE & EXERCISE: "Analysis" and Techniques -Cause-and-Effect Diagrams "Standardization" and Techniques	
7 (Fri.)	LECTURE & EXERCISE: Instructions for Statworks		LECTURE & EXERCISE: "Observation" and Techniques - How to Read and Draw a Histogram	
8 (Sat.)	Day Off			
9 (Sun.)	Day Off			
10 (Mon.)	LECTURE & EXERCISE: "Analysis" and Techniques - How to Draw a Scatter Diagram/ Stratification		EXERCISE: "Analysis" and Techniques -Combined Exercise-1 (Histogram and Scatter Diagrams)	
11 (Tue.)	COMPANY VISIT: - Case Study of Promoting Improvement Activities			
12 (Wed.)	LECTURE & EXERCISE: "Observation" and Techniques - Control Charts			
13 (Thu.)	EXERCISE: "Analysis" and Techniques -Combined Exercise-2 (Histogram and Control Charts)		LECTURE: Special Lecture "Advanced Quality Theory"	
14 (Fri.)	COMPANY VISIT: -Problem Solving Case Study			
15 (Sat.)	Day Off			
16 (Sun.)	Day Off			
17 (Mon.)	EXERCISE: Comprehensive Case Study -Guidance to the Case Study		EXERCISE: Comprehensive Case Study -Preparation for Reports by group	
18 (Tue.)	EXERCISE: Comprehensive Case Study -Presentation / Q & A/			Closing Ceremony
19 (Wed.)	(Departure from Japan)			

- Remarks: (1) The above schedule is subject to change for the convenience of lecturers and cooperating companies, or for other unavoidable reasons.
 (2) Several group discussion sessions will be arranged in the evening.
 (3) Though Sundays is day off in general, lectures may be scheduled if deemed necessary.

6. APPLICATION PROCEDURE:

(Application from host companies in Japan)

- (1) **Advance application:** The Japanese host company should contact the Training and Expert Dispatch Administration Group of AOTS, the address of which appears in Appendix 1, by telephone or e-mail with an outline of the training plan (e.g., duties and background of the participants, whether practical training is required or not, etc.).

Please submit the following application documents to the Training and Expert Dispatch Administration Group by the deadline.

1. AOTS Training Application Form (outline)
2. The trainee's personal record and enquiry into training contract
3. Pre-training report

- (2) **Formal application:** After receiving notification of acceptance of the advance application, the host company will be informed about the preparation of the necessary documents and arrangements for the formal application.

*If you have any questions, please contact the Training and Expert Dispatch Administration Group (see Appendix 1).

*The above-mentioned AOTS prescribed forms can be downloaded from the website below.

<https://www.aots.jp/hrd/technology-transfer/download/#kanri-shinkokoku> (Japanese).

(Application from overseas countries)

Individual applicants should ensure the delivery of the following application documents in both PDF and Excel format through Overseas Collaborating Organizations to the Overseas Cooperation Group of AOTS listed in Appendix 1 by the deadline.

As the deadline for the submission of the application documents differs for each organization, please ask the Overseas Collaborating Organizations. Please contact the Overseas Cooperation Group of AOTS listed in Appendix 1 for the contact address of the Overseas Collaborating Organization.

Applicants will be interviewed by the Overseas Collaborating Organizations.

[Application Documents]

- (1) AOTS Training Application Form and Applicant's Personal Record (AOTS official form: Handwriting should be avoided.)
*Soft copies of both PDF and Excel file will be required to submit.
- (2) Enquiry about your Interest in doing business with Japanese companies and/or Entry into Japanese market
*Excel file
- (3) Medical Check Sheet (AOTS official form: Handwriting should be avoided.) *PDF file
- (4) About the handling of Personal Information Concerning Trainees (AOTS official form) *PDF file
- (5) Overseas Travel Insurance Consent Form *PDF file
- (6) Enquiry into Training Contract (For Japanese Joint-Venture-Companies and Companies exclusively funded by Japanese Enterprises) *PDF file
*For application forms (1) and (3) and (4) to (6) above the applicant's signature is needed for authorization to proceed. In the absence of agreement, or failure of submission, course participation will not be granted.
- (7) A brochure of the applicant's company/organization *PDF file
- (8) Digital image of face photo (Please enter your name in the data title.)
- (9) Photocopy of the applicant's passport *JPEG or PDF file
*If the applicant doesn't possess a passport, an election card, a driver's license or a photo ID issued by a public organization in the home country containing his or her full name (written in Roman block letters) and date of birth should be submitted instead.
- (10) Pre-Training Report and Readiness Test *Word

Notes:

**AOTS may ask the applicants to submit additional documents such as an official registration document and the latest financial statement of the company/organization, etc., other than the above listed, if necessary.

** The formats are available from the Overseas Collaborating Organizations. Please ask them.

[Screening Committee Meeting]

The application documents will be forwarded to the AOTS Screening Committee for official approval of participation. Those who successfully pass the screening process will be notified when they receive the invitation documents.

Notes: If the number of applicants is less than the number of participants by the application deadline, AOTS may cancel or postpone this program.

Deadline of applications for PQPS to reach AOTS, Japan: **no later than 2 December 2024.**

Screening Committee for PQPS: **9 January 2025**

7. ARRIVAL AND DEPARTURE DATES:

Participants “in principle” are requested to arrive in Japan **the day before** the commencement of the training program and leave Japan the day after the final day of the program.

8. TRAINING COSTS (Application from overseas countries):

The training costs and the procedures for their settlement differ depending on whether an overseas company makes the application via the Overseas Collaborating Organization or a Japanese host company in Japan makes the application. The following is an explanation of the case of the application from an overseas country via a Collaborating Organization.

8-1) Outline

AOTS training programs are financed by Official Development Assistance (ODA) subsidies from the Japanese Ministry of Economy, Trade and Industry (METI) together with the Participation Fee from the participants themselves.

- The Training Costs will vary in accordance with the actual airfare and participants' staying days.
- Participants shall purchase their air tickets by themselves. For information on how to purchase tickets, please refer to “Guidelines for Purchase of Air Tickets by the Participant and method of reimbursement by AOTS” on Appendix 2.
- In principle, the subsidy from the Japanese Government applies from the day before the start of the training until the last day of the training.
- Please refer to Table 1 “List of Target Countries and Regions” on Appendix 4 for the classification of Category 1 and Category 2.
- Sample estimates of the Participation Fee for the countries of Category 1 and Category 2 are shown in Appendix 3-1, 3-2 “Estimate of the Fees and Costs”.
- Participants are encouraged to enter the round-trip amount of the airline ticket they intend to purchase in order to ascertain the approximate amount of the participation fee when applying for training.
- For Category 1, the participation fee is the sum of 1/3 of 1. Allowance Costs and 198,000 yen, 2. Course Implementation Costs minus ODA subsidies on Appendix 3-1.
- For Category 2, the participation fee is 148,000 yen, after subsidy for 2. Course Implementation Costs minus ODA Subsidies on Appendix 3-2. (1. Allowance Costs are fully subsidized.)
- Participants will pay the participation fee upon arrival in Japan.
- AOTS will reimburse the international travel expenses to the participant (the amount will be finalized based on the AOTS rules and regulations after checking the evidence documents for the purchase of the ticket

- submitted by the participant when he/she arrives in Japan).
- The amount the participant actually pays after arrival in Japan is the participation fee minus the international travel expenses.
- In principle, payment is accepted by credit card.
 - AOTS Tokyo Center (Tokyo): Visa and Mastercard can be accepted.
 - AOTS Kansai Kenshu Center (Osaka): Visa, Mastercard, JCB, American Express, Diners Club, and Discover can be accepted.
- If it is difficult to pay by credit card, payment by cash will be accepted. In such case, please contact AOTS before coming to Japan.

8-2) Breakdown

The Training Costs are the total amount of expenses to invite a participant to a training program in Japan. It is the sum of 1. Allowance Costs and 2. Course Implementation Costs. The Participation Fee, the amount that participants should bear, consists of “Contribution to Allowance Costs” and “Contribution to Course Implementation Costs” [A].

1. Allowance Cost

The allowance cost is composed of the following items.

The Contribution to Allowance Costs for the participants from the countries in Category 1 is 1/3 of the Allowance Costs. Participants from the countries in Category 2 do not have to pay the Contribution to Allowance Costs.

(1) International Travel Expenses

- International travel expenses are provided if an air ticket and its evidence document for purchase of the air ticket satisfy the required conditions; they are not provided if the conditions are not satisfied, or the participant is travelling on a free ticket.
- Participants should purchase their round-trip air tickets by themselves. Please refer to “Guidelines for Purchase of Air Tickets by the Participant and method of reimbursement by AOTS” listed on Appendix 2 for the arrangement and the method of reimbursement for details.
- A participant is not allowed to overstay at city(ies) of a third country between the participant’s home country and Japan for any reasons other than flight convenience. In such a case, AOTS might not reimburse the International Travel Expenses to the participant.

(2) Accommodation and Meal Allowance

At the AOTS Kenshu Center

- During the training period, participants will be accommodated at an AOTS Kenshu Center. AOTS will provide a participant with accommodation in a single room to the value of ¥9,900 per day with meals (lunch, dinner and breakfast), while the participant stays at an AOTS Kenshu Center.
- For the arrival day, AOTS will provide a participant with accommodation to the value of ¥9,020 per day with dinner and breakfast at an AOTS Kenshu Center.
- Please note that AOTS Kenshu Center canteens are closed on Sundays. The participant will receive ¥2,750 in cash per day for meals to cover the days of closure.

(3) Personal Allowance

- AOTS will pay ¥1,040 per day in cash to a participant.

(4) Welfare costs (Overseas Travel Insurance premiums)

- These are the costs of overseas travel insurance insured by AOTS for the participants.

2. Course Implementation Costs

The Contribution to Course Implementation Costs for a two-week course (the amount participants should bear) is ¥198,000 for those participating from Category 1 countries and ¥148,000 for those participating from Category 2 countries.

3. Domestic Travel Allowance

AOTS will arrange for the participants a chartered bus or other means of transport from the international airport to the AOTS training center on arrival in Japan, or provide part of the transport costs in cash as per the table below.

【Train】

Airport of arrival in Japan	Training Center	Standard Amount (Round trip)	Standard Route
Narita International Airport (Tokyo)	AOTS Kenshu Center (TKC)	5,500JPY	Narita international Airport (Tokyo)—AOTS Tokyo Kenshu Center (TKC)

- In either case, AOTS will arrange a meeting service at the arrival airport in Japan.

Contribution to AOTS's Administration Cost

AOTS would like to ask the participants to support us by offering ¥30,000 per participant as Contribution to AOTS's Administration Cost.

This contribution is not obligatory; however, it would be highly appreciated if you could understand the purpose of the contribution and give us the above amount of money in addition to the Participation Fee. AOTS will issue the receipt for the participants.

9. VISA ACQUISITION PROCEDURES:

(1) Status of Residence:

The status required for your training in Japan is a “Trainee.”

(2) Visa Acquisition

A participant shall apply for and obtain a “Trainee” visa at a Japanese embassy or a general consulate (hereinafter: diplomatic mission) with materials issued by AOTS such as a Guarantee Letter. It may be the case that the submitted materials are forwarded to the Consular Affairs Bureau (Tokyo) for checking. Please note that it is strongly recommended to apply well in advance as the application documents may be referred to the ministry in Japan, which can take time.

(3) Notes

A bearer of a visa other than “Trainee” visa, e.g., a “temporary visitor” visa, a “multiple” visa, or an APEC business travel card (ABTC), or a citizen from a country/area participating in a visa waiver program with Japan must confirm with the local Japanese diplomatic mission prior to visa application if the existing visa is in accordance with the qualification of stay in Japan for the AOTS management training program.

10. OVERSEAS TRAVEL INSURANCE COVERAGE:

AOTS provides participants with travel insurance from the time of arrival in Japan until the time of departure from Japan. The cover consists of medical expenses for medical treatment at a medical institution for injuries and illnesses, as well as liability and rescue costs. Please refer to “Overseas Travel Insurance Consent Form” and submit a signed agreement to confirm your agreement with the overseas travel insurance coverage when you apply for the training.

11. HANDLING OF PERSONALLY IDENTIFIABLE INFORMATION:

AOTS handles personally identifiable information we have obtained from the applicant as follows:

- (1) Administrator of Personally Identifiable Information: General Manager, General Affairs & Planning Department,

The Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS)

Group in charge: General Affairs and Personnel Group, General Affairs & Planning Department, AOTS

Tel: 81-3-3888-8211 E-mail: kojinjoho-cj@aots.jp

- (2) Use of Personally Identifiable Information

Personally identifiable information provided by the participant will only be used for the screening of the participants and the implementation of the training program. It will not be used for any other purposes or beyond the scope required by laws and regulations of Japan.

For AOTS’s privacy policy, please visit below website.

<https://www.aots.jp/en/privacy-policy/>

PRE-TRAINING REPORT

The Program for Quality Problem Solving
[PQPS]

This document will be used as a reference material in 1) the screening process of applicants and 2) the group discussion and the presentation to be held during the program by sharing with lecturers and other participants. Therefore, the applicant is requested to fill in all of the items clearly and concretely.

*AOTS will not use this information for any other purposes other than an AOTS training program.

Note: Please fill in the following items by using a personal computer or similar equipment in English. Handwriting should be avoided.

1. Your name	
2. Your country	
3. Name of your company/ organization	
4. Outline of your organization (preferably attach an organization brochure)	
5. Your position and department (preferably attach an organizational chart, indicating your position)	
6. Your duties in detail	
7. Describe the most critical problems that you are now facing in your quality improvement activities, indicating their suspected causes from your viewpoint	

READINESS TEST

In order to participate in the PQPS course and correctly understand its content, a basic knowledge of statistics and the fundamental concepts of quality control are required. **This readiness test is to estimate such knowledge and will be used as part of the reference materials for the screening.** Please read the following sentences carefully and select the right answer on the answer sheet. **(If you cannot achieve a score of at least 70% on this test, it will be difficult for you to understand the content of the course or to benefit from its full effects.)**

Question 1 : CONCEPT

Answer "C" (Correct) if the statement is correct, or "F" (Fault) if it is incorrect.

- (1) "Quality assurance" means satisfying customers with "free repairs" or "change to a new one" when a customer complains.
- (2) In order to avoid customer complaints about defective products, it is necessary for a company to implement 100% inspection.
- (3) PDCA is a profound principle in TQM and stands for "Please Don't Change Anything."
- (4) In Total Quality Management (TQM) "quality" represents not only quality of function of products but also quality of service and other areas.
- (5) TQM activities are executed at production sections and are thus not the concern of the sales or administrative sections.
- (6) In TQM, quality is the main focus, so that delivery, cost and other economic factors are not necessarily of concern.
- (7) As QC Circle activities are autonomous activities, they must be done outside of working hours and the company doesn't need to pay for them.
- (8) The person in charge of the "QC Program" should be the Quality Control Manager and not the Factory Manager.
- (9) Past data are not useful in the problem-solving process.
- (10) All factual information, even that which is not numerically expressible, like linguistic data, is potentially useful data in the problem-solving process.

Question 2: Ability to Draw Up Diagrams

The following table is a computation table used when drawing up a Pareto Diagram which is one of the QC tools. Select the correct numbers in cells (1) – (5) in the table.

Data Sheet for Pareto Diagram

Type of Defect	Number of Defects	Cumulative Total	Percentage of Overall Total	Cumulative Percentage
A	72	72	36	36
B	38	110	19	55
C	26	136	(1)	68
D	14	150	(2)	(3)
E	10	(4)	5	(5)
Others	40	200	20	100
Total	200	200	100	100

[a:7 b:13 c: 75 d:80 e: 160 f:165]

Question 3 : Basic Computational Ability which is required to utilize QC tools

Calculate the following and select the right answer.

$$1) \frac{(13.42 + 13.62 + 13.66 + 13.48 + 13.52 + 13.57)}{6} =$$

$$2) \frac{2.523 + 0.005 \times \frac{30}{90}}{90} =$$

$$3) \frac{\frac{1}{100^2} (1917 - \frac{1}{7} \times 103^2)}{7} =$$

$$4) \frac{29.86 + 0.577 \times 27.44}{27.44} =$$

$$5) \frac{29.86 - 0.577 \times 27.44}{27.44} =$$

$$6) \frac{\sqrt{0.669 \times 10^{-2}}}{10^{-2}} =$$

$$7) \frac{0.005 \times \sqrt{(302 - \frac{30^2}{90}) \div (90 - 1)}}{90 - 1} =$$

$$8) \frac{2312.02 - \frac{263.2^2}{30}}{30} =$$

$$9) \frac{\frac{0.0913}{\sqrt{2.88 \times 0.00840}}}{\sqrt{2.88 \times 0.00840}} =$$

[a: 0.00906 b: 4.01×10^{-2} c: 0.082 d: 0.59 e: 2.52467 f: 2.88 g: 13.545 h: 14.03 i: 45.69 j: 50.00]

Question 4: Mean & Standard Deviation

Calculate the mean and standard deviation of the next set of data, and select the right answer.

1) 2 5 1 3 4

$$\bar{x} = \underline{\hspace{2cm}} \quad s = \underline{\hspace{2cm}}$$

(1) (2)

2) 22 25 21 23 24

$$\bar{x} = \underline{\hspace{2cm}} \quad s = \underline{\hspace{2cm}}$$

(3) (4)

3) 234562 234565 234561 234563 234564

$$\bar{x} = \underline{\hspace{2cm}} \quad s = \underline{\hspace{2cm}}$$

(5) (6)

[a: 1.56 b: 1.57 c: 1.58 d:3.0 e: 23.0 f: 234563.0]

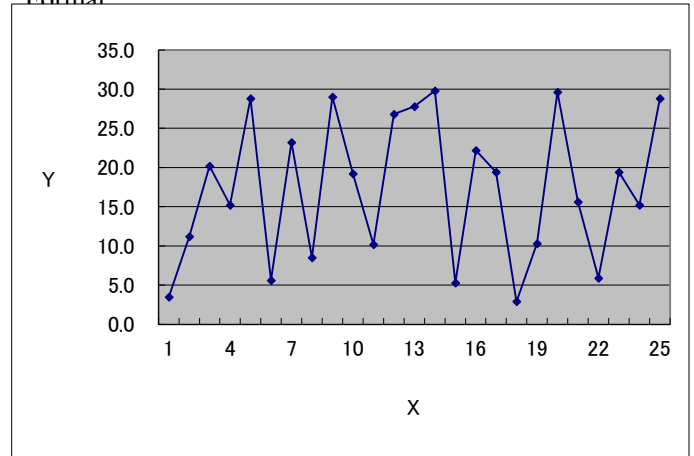
Question 5: Ability to Draw a Graph

Create the same type of graph shown below on the right as “Format” on the “Readiness Test Answer Sheet” by using the given data shown below on the left.

1) Data

X	Y	X	Y
1	35.6	14	29.8
2	29.2	15	31.6
3	20.2	16	22.2
4	39.4	17	31.2
5	29.2	18	28.8
6	31.4	19	31.4
7	23.2	20	29.6
8	32.0	21	39.0
9	29.0	22	19.4
10	32.6	23	34.2
11	32.2	24	32.6
12	26.8	25	28.2
13	27.8		

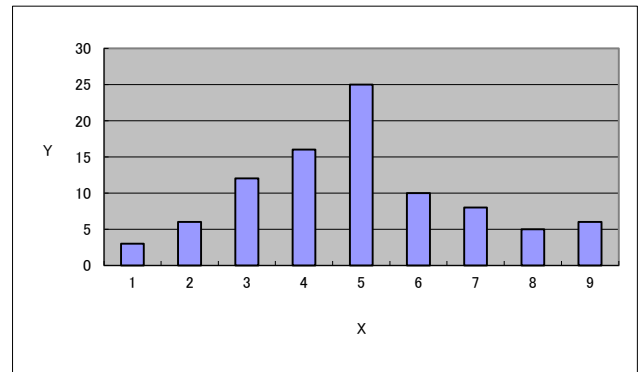
Format



2) Data

x	Y
1	1
2	4
3	9
4	14
5	22
6	19
7	10
8	5
9	6

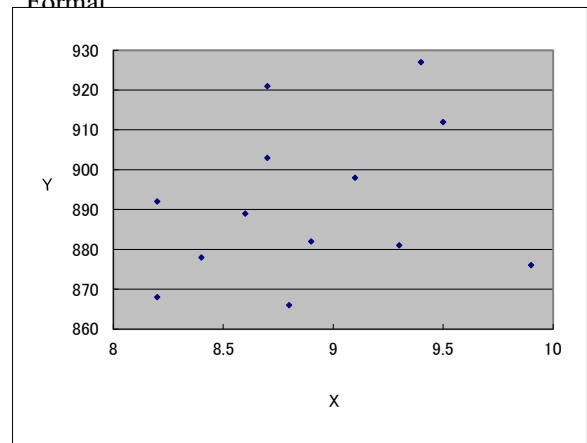
Format



3) Data

X	Y	X	Y
8.6	889	8.7	896
8.9	884	8.4	894
8.8	874	8.2	864
8.8	891	9.2	922
8.4	874	8.7	909
8.7	886	9.4	905
9.2	911		
8.6	912		
9.2	895		

Format



Question 6: English Check Sheet

Complete the following sentences with suitable words.

<Populations and Samples>

In quality control, we try to discover facts by collecting data and then take necessary action based on those facts. The data is not collected as an end in itself, but as a means of finding out the facts behind the data.

For example, consider a sampling inspection. We take a sample from a lot, carry out measurements on it, and then decide whether we should accept the whole lot or not. Here our concern is not the sample itself, but the quality of the whole lot. As another example, consider the control of a manufacturing process using an \bar{x} -R control chart.

Our purpose is not to determine the characteristics of the sample taken for drawing the \bar{x} -R chart, but to find out what state the process is in.

The totality of items under consideration is called the *population*. In the first example above, the population is the [(1)], and in the second it is the [(2)].

Some people may feel it difficult to regard a “process” as a “population” because while a “lot” is indeed a group of finite individual objects, a “process” itself is not a product at all, but is made up of the 5M’s (man, machine, material, method, and measurement).

When we turn our attention to product-making function, we will recognize that the “process” produces unmistakably a group of products. Moreover, the number of products is infinite unless the “process” stops producing them, and for this reason, a process is considered to be an infinite [(3)].

One or more items taken from a population intended to provide information on the population is called *sample*. Since a [(4)] is used for estimating the characteristics of the entire population, it should be chosen in such a way as to reflect the characteristics of the population. A commonly-used sampling method is to choose any member of the population with equal probability. This method is called *random sampling*, and a sample taken by random sampling is called a *random sample*.

We obtain [(5)] by measuring the characteristics of a sample. Using this data, we draw an inference about the population, and then take some remedial action. However, the measured value of a sample will vary according to the sample taken, making it difficult to decide what action is necessary. Statistical analysis will tell us how to interpret such data.

[a: data b: lot c: population d: process e: sample]

Readiness Test Answer Sheets

Question 1-4, 6: Please circle the correct answer. Question 5: Please make graphs on the sheet.

Question 1	(1)	F	C								
	(2)	F	C								
	(3)	F	C								
	(4)	F	C								
	(5)	F	C								
	(6)	F	C								
	(7)	F	C								
	(8)	F	C								
	(9)	F	C								
	(10)	F	C								
Question 2	(1)	a	b	c	d	e	f				
	(2)	a	b	c	d	e	f				
	(3)	a	b	c	d	e	f				
	(4)	a	b	c	d	e	f				
	(5)	a	b	c	d	e	f				
Question 3	(1)	a	b	c	d	e	f	g	h	i	j
	(2)	a	b	c	d	e	f	g	h	i	j
	(3)	a	b	c	d	e	f	g	h	i	j
	(4)	a	b	c	d	e	f	g	h	i	j
	(5)	a	b	c	d	e	f	g	h	i	j
	(6)	a	b	c	d	e	f	g	h	i	j
	(7)	a	b	c	d	e	f	g	h	i	j
	(8)	a	b	c	d	e	f	g	h	i	j
	(9)	a	b	c	d	e	f	g	h	i	j
Question 4	(1)	a	b	c	d	e	f				
	(2)	a	b	c	d	e	f				
	(3)	a	b	c	d	e	f				
	(4)	a	b	c	d	e	f				
	(5)	a	b	c	d	e	f				
	(6)	a	b	c	d	e	f				

Readiness Test Answer Sheets

Question 5	(1)									
	(2)									
	(3)									
Question 6	(1)	a	b	c	d	e				
	(2)	a	b	c	d	e				
	(3)	a	b	c	d	e				
	(4)	a	b	c	d	e				
	(5)	a	b	c	d	e				

Appendix 1 : Contact Information

AOTS (Japan)	
Application from overseas countries:	30-1, Senju-azuma 1-chome, Adachi-ku Tokyo 120-8534, Japan
Overseas Cooperation Group I, Overseas Management Department	Tel: 81-3-3888-8256
	Fax: 81-3-3888-8242
	E-mail: shouhei-au@aots.jp
Application from host companies in Japan:	30-1, Senju-azuma 1-chome, Adachi-ku Tokyo 120-8534, Japan
Training & Expert Dispatch Administration Group, Corporate Liaison Department	Tel: 81-3-3888-8221
	Fax: 81-3-3888-8428
	E-mail: kigyo-inquiry-az@aots.jp
*For the contact address of the Overseas Collaborating Organizations, please contact Overseas Cooperation Group.	
Application from overseas countries:	Gaysorn Amarin 12F 496-502 Ploenchit Rd, Lumpini, Pathumwan, Bangkok 10330 Thailand
Bangkok Office	Tel: 66-2-255-2370
	Fax: 66-2-255-2372
	E-mail: information@aots.or.th
Application from overseas countries:	12A Floor, Wisma KEIAI, Jl. Jend Sudirman Kav 3 Jakarta 10220, Indonesia
Jakarta Office	Tel: 62-21-572-4262、62-21-572-4263
	Fax:
	E-mail: information@aots.or.id
Application from overseas countries:	Office Unit 12A, Rectangle One, D-4 Saket District Center, New Delhi 110017, India
New Delhi Office	Tel: 91-11-41054504
	Fax:
	E-mail: info@aots.org.in

Appendix 2:**Guidelines for Purchase of Air Tickets by the Participant
And method of reimbursement by AOTS****1. Arrival and Departure Dates:**

In principle, arriving in Japan **on the day before** the commencement of the program and departing on the day after the closing day of the program.

2. Method of Reimbursement:

When purchasing an air ticket, participants are requested to submit purchase evidence documents to show that participants have **purchased a discount economy air ticket. If the participants purchase a ticket other than economy class, such as first class, business class, the expenses will not be reimbursed.**

(1) International Travel Expenses eligible to be Subsidized (Reimbursement)

During the training program in Japan, participants should present to AOTS their air tickets and submit purchase evidence documents (2) (i) to (iii) below. AOTS finalizes the travel expenses based on these documents and will reimburse the participant in cash (JPY) the amount eligible for subsidy out of the sum of the following items (i) and (ii).

(i) In principle, the actual round-trip airfare for a discounted economy class flight on a direct flight or a connecting flight on a reasonable route.

* The round-trip airfare arranged up to a ceiling of the amount listed on the following page will be eligible for subsidy.

*If the participant purchases a ticket that does not satisfy the above (i) required conditions, such as business class, the subsidized amount for travel expenses will not be reimbursed.

* A participant is not allowed to overstay at city(ies) of a third country between the participant's home country and Japan for any reason other than flight convenience. In such a case, AOTS might not reimburse the International Travel Expenses to the participant.

(ii) The departure tax, airport tax and security insurance fees, other taxes and actual costs of ticketing fees by travel agents indispensable to above (i) flight.

(2) Evidence Documents of Purchasing of Air Ticket

When purchasing air tickets, participants are requested to arrange an air ticket that meets the conditions in (1) (i) above, then obtain an quotation issued by travel agents or obtained via an Internet service for purchasing air tickets. The participants should then submit the payment evidence documents in (i) to (iii) below.

Purchase Evidence Documents	Details	
(i) Evidence Documents confirming the amount quoted at the time of ticket purchase.	-Estimate obtained by any of the methods a) to c) listed on the right must be submitted.	a) Quotation issued by the travel agency. b) An email with the quoted price sent by the travel agency (copy) c) A screenshot of website displaying the prices of the air ticket on the Internet. *The quotations in a) to c) above, (quotation) or a screenshot of a price on the Internet shall contain the following information. (The conditions such as date of travel and seat classes (e.g., economy class))
(ii) Receipt	-Receipts issued by travel agencies. -If purchased via the internet, a screenshot of the credit card authorization screen or a copy of the credit card statement is acceptable. -E-tickets with the word 'receipt' and statement of the actual purchase price are also acceptable).	
(iii) E ticket		

< Upper limit for round-trip airfare to Japan eligible for subsidy >

Departing from		Upper Limit for Round-trip (JPY)	Departing from		Upper Limit for Round-trip (JPY)
Southeast Asia	Indonesia	308,470	Africa	Egypt	451,070
	Malaysia	265,820		Ghana	414,410
	Myanmar	311,970		Kenya	381,720
	Philippines	168,520		Tanzania	368,240
	Thailand	297,350		Zambia	346,570
	Vietnam	247,920		Middle East	Iran
Northeast Asia	Mongolia	167,930	Europe and Others	Georgia	467,100
South Asia	Bangladesh	428,400		North Macedonia	373,470
	India	437,270		Turkey	407,330
	Nepal	256,070			
	Pakistan	356,370			
	Sri Lanka	316,560			
Latin America	Argentina	777,200			
	Bolivia	921,220			
	Brazil	692,730			
	Colombia	905,790			
	Mexico	738,660			
	Paraguay	1,017,490			
	Peru	582,800			
	Venezuela	892,180			

Notes: This table is applicable to participants in training programs **starting between October 1, 2024 and March 31, 2025.**

[Appendix 3-1] Estimate of the Fees and Costs [Category 1 Country]

Country: Philippines
 International Travel Expenses: Philippines ↔ Japan, Roundtrip
 Management Training Course: PQPS (14-day Course)

(Japanese Yen)

Training Costs	Total Amount	ODA Subsidies	Participation Fee
1. Allowance Costs <Breakdown of Allowance Cost>	<Breakdown>		
(1) International Travel Expenses	168,520	[B]	
(2) Accommodation and Meal Allowances a. [at the AOTS Kenshu Center] @ 9,020 x 1 day (Arrival Day) =	9,020		
@ 9,900 x 14 days = [during the study tour]	138,600		
b. Meal Allowance @ 2,750 x 0 day(s) =	0		
c. Accommodation Allowance @ 14,500 x 0 day(s) =	0		
(3) Personal Allowance @ 1,040 x 15 days =	15,600		
(4) Welfare Costs Overseas Travel Insurance	1,800		
Subtotal (1)~(5)	333,540	222,360 [2/3]	111,180 [1/3]
2. Course Implementation Costs <Breakdown of Course Implementation Costs>	<Breakdown>		
(1) Direct Course Implementation Cost	144,000	96,000	48,000
(2) Personnel expenses, Miscellaneous costs	398,000	248,000	150,000
Subtotal (1)~(2)	542,000	344,000	198,000
3. Domestic Travel Allowance (Narita Airport - T K C)	5,500	5,500	
Total	881,040	571,860	309,180 ← [A]

The amount of International Travel Expenses shown here is for reference only. Please put the airfare you plan to purchase and make calculation by yourself. Please also see 3. Notes at the bottom of the page.

Grey colored column = The amount paid in kind to participant by AOTS.

Yellow colored column = The amount paid in cash to participant by AOTS during the training.

2. Settlement Method and Breakdown

After arrival in Japan, the participant and AOTS shall make a settlement $[C]=[A]-[B]$ shown below.

If the difference $[C]$ is negative (-), it means that the amount will be paid from AOTS to the participant.

	Item	Amount (Japanese Yen)	Note
[A]	Participation Fee (Participation Fee consists of 1. Allowance Costs and 2. Course Implementation Costs minus ODA Subsidies)	309,180	This is the amount participants should bear, and the value of which varies with the International Travel Expenses amount, and participants' staying days, etc.
[B]	International Travel Expenses paid back from AOTS to participant during the training.	168,520	The amount of International Travel Expenses shown here is for reference only.
[C]	Amount to be settled after coming to Japan $[C]=[A]-[B]$	140,660	-

(Japanese Yen)

	Amount paid to participants from AOTS to participant in cash during the training.	21,100	Total amount of yellow colored column in the table.
--	---	---------------	---

*In the case that participants travel to the Kenshu (Training) Center by bus, the transportation is provided in kind and not by cash.

3. Notes

Air ticket will be purchased by participant. AOTS will subsidize the amount in accordance with rules & regulations.

International travel expenses subsidy will be provided if an air ticket and its receipt satisfy required conditions; not provided if unsatisfying conditions or for a free ticket.

In case the international travel expenses subsidy will not be provided, the amount of 1.-(1) in the above figure will be zero and therefore, the "Allowance Costs" and "Total Cost" will be changing accordingly.

[Appendix 3-2] Estimate of the Fees and Costs [Category 2 Country]

Country: Bangladesh
 International Travel Expenses: Bangladesh ⇄ Japan, Roundtrip
 Management Training Course: PQPS (14-day Course)

1. Overview of the Estimate of the Training Costs

(Japanese Yen)

Training Costs	Total Amount	ODA Subsidies	Participation Fee
1. Allowance Costs <Breakdown of Allowance Cost>	<Breakdown>		
(1) International Travel Expenses	428,400 [B]		
(2) Accommodation and Meal Allowances a. [at the AOTS Kenshu Center] @ 9,020 x 1 day (Arrival Day) =	9,020		
@ 9,900 x 14 days = [during the study tour]	138,600		
b. Meal Allowance @ 2,750 x 0 day(s) =	0		
c. Accommodation Allowance @ 14,500 x 0 day(s) =	0		
(3) Personal Allowance @ 1,040 x 15 days =	15,600		
(5) Welfare Costs Overseas Travel Insurance	1,800		
Subtotal (1)~(5)	593,420	593,420 [3/3]	[NONE] 0
2. Course Implementation Costs <Breakdown of Course Implementation Costs>	<Breakdown>		
(1) Direct Course Implementation Cost	144,000	144,000	0
(2) Personnel expenses, Miscellaneous costs	401,000	253,000	148,000
Subtotal (1)~(2)	545,000	397,000	148,000
3. Domestic Travel Allowance (Narita Airport - TKC)	5,500	5,500	
Total	1,143,920	995,920	148,000 [A]

The amount of International Travel Expenses shown here is for reference only. Please put the airfare you plan to purchase and make calculation by yourself. Please also see 3. Notes at the bottom of the page.

Grey colored column = The amount paid in kind to participant by AOTS.

Yellow colored column = The amount paid in cash to participant by AOTS during the training.

2. Settlement Method and Breakdown

After arrival in Japan, the participant and AOTS shall make a settlement $[C]=[A]-[B]$ shown below.

If the difference $[C]$ is negative (-), it means that the amount will be paid from AOTS to the participant.

	Item	Amount (Japanese Yen)	Note
[A]	Participation Fee (Participation Fee consists of 2. Course Implementation Costs minus ODA Subsidies.)	148,000	This is the amount participants should bear.
[B]	International Travel Expenses paid back from AOTS to participant during the training.	428,400	The amount of International Travel Expenses shown here is for reference only.
[C]	Amount to be settled after coming to Japan $[C]=[A]-[B]$	-280,400	-

(Japanese Yen)

	Amount paid to participants from AOTS to participant in cash during the training.	21,100	Total amount of yellow colored column in the table.
--	---	--------	---

*In the case that participants travel to the Kenshu (Training) Center by bus, the transportation is provided in kind and not by cash.

3. Notes

Air ticket will be purchased by participant. AOTS will subsidize the amount in accordance with rules & regulations.

International travel expenses subsidy will be provided if an air ticket and its receipt satisfy required conditions; not provided if unsatisfying conditions or for a free ticket.

In case the international travel expenses subsidy will not be provided, the amount of 1.-(1) in the above figure will be zero and therefore, the "Allowance Costs" and "Total Cost" will be changing accordingly.

[Appendix 4] List of Target Countries and Regions (2023-2024)

Trainees should be residing in the following countries/regions.

<i>Category 1*</i>		
Albania	Iran	Papua New Guinea
Argentina	Iraq	Paraguay
Armenia	Jamaica	Peru
Azerbaijan	Jordan	Philippines
Belarus	Kazakhstan	Samoa
Belize	Kosovo	Serbia
Bhutan	Kyrgyzstan	Sri Lanka
Bolivia	Lebanon	St. Helena
Bosnia and Herzegovina	Libya	St. Lucia
Brazil	Malaysia	St. Vincent and Grenadines
Colombia	Maldives	Suriname
Costa Rica	Marshall Islands	Syrian Arab Republic
Cuba	Mexico	Tajikistan
Dominica	Micronesia	Thailand
Dominican Republic	Moldova	Tokelau
Ecuador	Mongolia	Tonga
El Salvador	Montenegro	Turkey
Fiji	Montserrat	Turkmenistan
Georgia	Nauru	Ukraine
Grenada	Nicaragua	Uzbekistan
Guatemala	Niue	Vanuatu
Guyana	North Macedonia	Venezuela
Honduras	Pakistan	Viet Nam
India	Palau	Wallis and Futuna
Indonesia	Panama	West Bank and Gaza Strip
<i>Category 2*</i>		
Afghanistan	Ethiopia	Niger
Algeria	Gabon	Nigeria
Angola	Ghana	Rwanda
Bangladesh	Gambia	Sao Tome and Principe
Benin	Guinea	Senegal
Botswana	Guinea-Bissau	Sierra Leone
Burkina Faso	Haiti	Solomon Islands
Burundi	Kenya	Somalia
Cabo Verde	Kiribati	South Africa
Cambodia	Lao People's Democratic Republic	South Sudan
Cameroon	Lesotho	Sudan
Central African Rep.	Liberia	Tanzania
Chad	Madagascar	Timor-Leste
Comoros	Malawi	Togo
Congo	Mali	Tunisia
Côte d'Ivoire	Mauritania	Tuvalu
Democratic Republic of the Congo	Mauritius	Uganda
Djibouti	Morocco	Yemen
Egypt	Mozambique	Zambia
Equatorial Guinea	Myanmar	Zimbabwe
Eritrea	Namibia	
Eswatini	Nepal	

1. The list above is in alphabetical order, with the generic name for the country being used.
2. These countries and regions are mainly developing countries as designated by the OECD/DAC (Organization for Economic Co-operation and Development / Development Assistance Committee).

*Low/Lower Middle/Upper Middle Income Countries (Category 1):

According to the DAC list of ODA recipients effective for reporting on 2024 and 2025 flows, these are Low/Lower Middle/Upper Middle Income Countries and regions which are not "Least Developed Countries", and thus have been recognized by the Japanese government as target countries for ODA. African countries and regions listed have been excluded as they will be treated as Category 2 countries this fiscal year.

*Least Developed Countries (Category 2):

These are mainly the least developed countries on the DAC list and countries in the African countries and regions, which the Japanese government has identified as target countries to especially support through ODA.