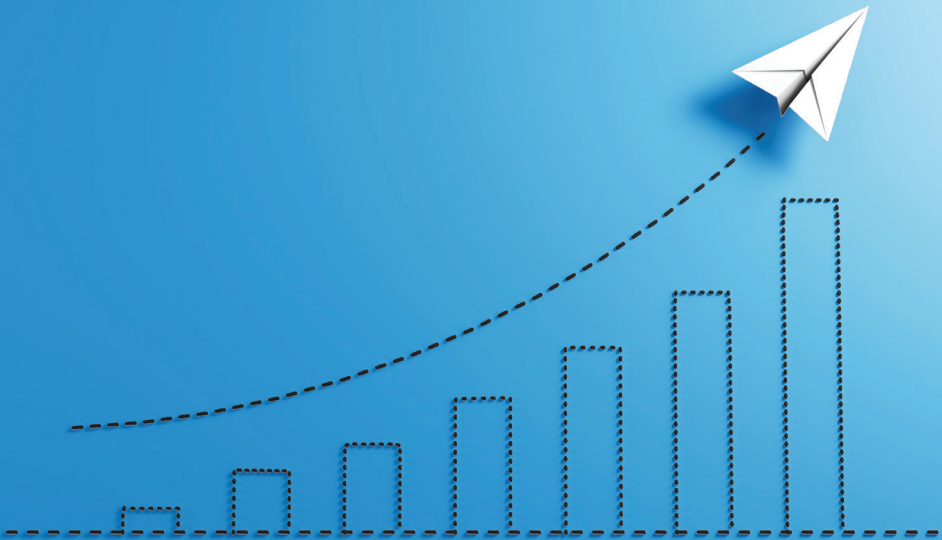


Communication Skills for Technical Professionals

Practical Techniques
for Competitive Advantage



Sim Segal

Communication Skills for Technical Professionals

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for Competitive Advantage

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ACTEX Learning

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Preface

PURPOSE OF THE BOOK

Being a successful technical professional requires more than just mastery of our technical skills. It is not enough to have the right answer. We must convey our ideas so that others understand and adopt them. The people at the top of any organization have solid technical skills, but it is their superior communication skills that typically made the difference in their career trajectories. Employer surveys also confirm that the most important skills to develop are communication skills. Unfortunately, many resist opportunities to enhance these skills. This is partly based on a mistaken belief that these skills are inborn and cannot be learned. Technical professionals can learn these skills, if the correct techniques are selected and properly explained.

This book is a curated selection of communication skills most relevant to technical professionals, authored by a technical professional, in a way that is accessible to technical professionals. Throughout my career, I have been highly trained in a wide range of business communication skills. This was practical training provided by corporate executive training professionals, as opposed to taking place in an academic setting. In this book, I am sharing the subset of these skills that I found most helpful in advancing my career. I wrote this book because I want you to use them in further advancing your career as well. I also use my understanding of technical work and the day-to-day challenges we face to describe these skills in a way that will resonate.

This book reveals how to:

- Better understand others by applying listening skills and by reading body language

- Confidently deliver engaging and impactful presentations
- Effectively persuade others to adopt your ideas, while maintaining collegiality
- Conduct successful interviews, from both sides of the table
- Project a professional presence and expand your network

INTENDED AUDIENCE

This book is intended for technical professionals, such as:

- Business, Finance and Legal
 - Accountants and auditors
 - Actuaries
 - Lawyers
 - Risk management and enterprise risk management professionals
 - Supply chain and logistics analysts
- Healthcare and Life Sciences
 - Doctors, dentists, and nurses
 - Medical and clinical lab technicians
 - Pharmacists
- Engineering and Architecture
 - Architects
 - Construction managers
 - Engineers
 - Environmental scientists
- Information Technology and Data
 - Artificial intelligence specialists
 - Software (including app) developers
 - Cybersecurity experts
 - Data analysts

- Information security analysts
- IT business analysts, IT managers, and systems administrators
- Physical and Mathematical Sciences
 - Chemists
 - Mathematicians and quantitative analysts
 - Statisticians

WEBSITE

The following website provides additional resources on the topics in this book:

www.simergy.com/comm-skills.

PART ONE

Understanding

"Seek first to understand, then to be understood."

Stephen R. Covey, author, *The 7 Habits of Highly Effective People*

2

CHAPTER TWO

Reading Body Language

“Body language and tone of voice – not words – are our most powerful assessment tools.”

Christopher Voss, former FBI hostage negotiator

“The most important thing in communication is hearing what isn’t said.”

Peter F. Drucker, pioneer of the study of management as a discipline

IMPORTANCE OF BODY LANGUAGE

When we are listening to someone and are not clearly hearing every word, it is disconcerting. We are, and should be, concerned that our understanding may be incomplete or incorrect, by missing a key element that changes the meaning. For example, picture someone speaking to us from across the room, or meeting us outside on a windy day, or on an audio or video call with poor reception. As a technical professional, this is like being asked to provide a solution to a problem, where we are aware that there may be key pieces of data or assumptions missing. We would be uncomfortable proceeding without first correcting this and getting the complete picture.

Unfortunately, this is how most people act when in a conversation. We typically rely solely on the listener's spoken words. We treat their words as the only data available. We are simply unaware that there is additional information being sent our way, in the form of body language. For many reasons, someone may be unable or unwilling to share their true attitude on a subject. Their words – or sometimes their lack of words – send us off with the wrong impression. This routinely leads to missteps in managing key relationships. Once we become aware of body language, including how to detect and interpret it, we become more proficient at understanding, and responding to, others.

RULES FOR READING BODY LANGUAGE

There are five rules for reading body language:

Rule #1: Observe inconspicuously

Rule #2: Change from baseline is a signal

Rule #3: Quick changes are best

Rule #4: Universal signals

Rule #5: Comfort Level

Rule #1: Observe Inconspicuously

Observe others, but do so in a subtle way, so that it is unnoticed. If someone becomes aware of your observing their body language, they will become uncomfortable and mask their body language.

Rule #2: Change from Baseline is a Signal

A change in someone's normal, baseline pattern of movement is a signal. As a result, knowing what is the normal, baseline pattern of movement for a particular person is a key input into reading their body language. The more information an observer can gather about a person's normal, baseline body language, the more able they will be to read their body language signals. As a result, the observer should try to spend as much time as possible in their presence, especially when the person is at ease, in their normal, baseline state.

As a cautionary example, imagine we observe someone biting their nails and conclude that they must be anxious about something going on right now. What we may not know, being unfamiliar that person, is that they always bite their nails. They are generally and unconsciously anxious. As a result, we may be drawing an incorrect conclusion. However, if we were familiar with this person, and knew their normal, baseline amount of nail biting, and observe more nail biting than usual, we might conclude that there is, currently, a higher level of discomfort.

In some situations, such as interviewing or interrogating someone, people often take an adversarial or even antagonistic position. These people are under the impression that this is effective. They believe putting someone under pressure reveals truthful words. This is a mistake. To gain the most truthful information, we must accurately read body language. This critically depends on observing what the baseline pattern of movement is for this particular person. As a result, we should make them as comfortable as possible. That way, we can spend as much time as possible observing how baseline looks for them. To make them comfortable and relaxed, we should be friendly (e.g., smile), be respectful, and provide the accommodations discussed in the section on speaker comfort (Chapter 1).

Rule #3: Quick Changes are Best

Changes in a person's body language that happen quickly in response to a stimulus are the most useful. They are most reliable, because these are similar to reflex reactions, which occur before the person has a chance to consciously attempt to mask them. Also, we are more likely to be able to identify the stimulus – for example, something said or done – because it occurred just prior to the change in body language.

Rule #4: Universal Signals

Most body movements have universal meaning. These can be relied upon to always mean the same thing, for all people, everywhere. Each example of body language covered in this chapter involves universal signals, unless otherwise noted. Some body movements are not universal signals and can mean different things depending on a variety of factors, such as culture.

Other body movements can only be understood in the context of a particular person as an individual, which is where Rule #2 (Change from Baseline is a Signal) becomes critical.

Rule #5: Comfort Level

For most body language signals, all you should expect to be able to read with accuracy is someone's level of comfort or discomfort. Fortunately, this does provide us with a lot of information on which to act. We should make any inferences carefully and not over-interpret the information.

Some body movements are pacifiers – actions intended to soothe – and these are indications that the person has become more uncomfortable. We will point these out along the way, in our discussion of the types of body language below.

READING 35 TYPES OF BODY LANGUAGE

We discuss here 35 types of body language, including how to identify and interpret each one. These were selected based on their practicality, which considers frequency of occurrence, ease of detection, and reliability of interpretation³.

Crossing Arms

When someone crosses their arms across their chest, it indicates defensiveness. They are trying to protect themselves, to shield against, to block, something coming their way. In a one-on-one conversation, this usually means that we said something they take issue with. We should stop, try to figure out (subtly) what just happened and why. Then, work to address and resolve the issue, before moving forward. I have often seen technical professionals sailing right through their presentation and failing to take note of this important signal. This is like a pilot flying a plane and ignoring one of the flashing red warning lights. A more apt analogy is actually that the pilot

³Self-explanatory body language, such as smiling, frowning, eye rolling, etc., is omitted.

has unwittingly obscured the indicator and cannot see it. Most technical professionals are focused solely on their messaging and are not trained to look for, and recognize, how it is being received.

Pursing Lips

When someone purses their lips, it indicates that they dislike or disagree with something they just heard. This is another body posture that I regularly see technical professionals miss. Like crossing arms, this is easy to detect, if you are watching for it. It should be taken very seriously, because it is a quick reaction and can usually be traced to a specific comment in that moment. Technical professionals should stop, reassess, and figure out how to win that person back.

Shifting Hips While Seated

When a person shifts their hips side-to-side, while seated, this indicates a sudden increase in discomfort. This is easily visible, even during video meetings, because the whole upper body moves as a result of the shift.

Turning Torso

When someone turns their torso away from a first person towards a second person, it indicates one or more of the following:

- The first person said or did something that they did not like.
- The second person said or did something preferable to what the first person said or did.
- They are personally more comfortable with the second person than the first person.

Hand to Hand Contact

When someone is touching or rubbing their hands or fingers together, it usually indicates discomfort. This is just one example of pacifying body language, where one part of the body is touching another part of the body, in a repetitive, rhythmic, way. Some common examples:

- One hand touching or rubbing the other (e.g., hand wringing) or rubbing palms together
- One hand's fingers rubbing together, such as a thumb and middle finger, on the same hand
- Both palms are facing together with fingers interlaced and either at rest or sliding the fingers back and forth (faster motion indicates more discomfort)

There are two notable exceptions to this general indication:

1. When both palms are touching, with fingers non-interlaced, and both hands are rubbing together quickly, it indicates excitement; picture someone who is presented with a tasty meal.
2. When both palms are facing together but not touching, and all the fingertips of one hand are touching the fingertips of the other, with the fingers spread apart, it indicates confidence. This is called “steepling,” because when pointing upward it forms a steeple shape; this can also be pointing forward.

Stroking Neck or Head

When someone is stroking their neck or head with one or both of their hands, it indicates that they are uncomfortable. This is another example of pacifying body language. Some common examples:

- Reaching both hands to the back of their neck and pulling their hands forward
- Rubbing the back or front of their neck with one hand
- Running their hands through their hair or across their scalp

Arms Akimbo

When an individual is placing their hands on their hips, with the thumb pointing backwards and the other fingers pointing forward, and the elbows pointing out to the sides, this is a power stance that indicates confidence, dominance, or even arrogance. This is an example of a territorial display

(demonstrating an ability to take up more of the available space), where the elbows pointing outward are taking up more space. The arms akimbo position is typically accompanied by legs that are spread apart a little more than shoulder width.

Avoid confusing arms akimbo with arms reserve akimbo (discussed below), which has a nearly opposite interpretation.

Crossed Legs

When we have a one-on-one meeting with someone and they cross their legs, it indicates that they are comfortable with us. If they were uncomfortable, they would have both feet firmly on the ground. This is a “ready to flee” position, which is a remnant of ancient unconscious reflexes rather than a conscious expectation of an actual impending assault.

Crossed Leg Direction

A person will cross their legs in the direction of the person they feel is more receptive. If a person is sitting in between two people and crossing their legs in the direction of one of them, then, it indicates that they have more of a preference for the person towards whom they’ve crossed their legs, at that moment.

Walking Pace

The person that sets the walking pace – the one to whom all others in the group adjust their own pace to match – is usually the person with the most power, in that group.

Fig Leaf

When someone is standing, with both arms hanging down and hands clasped together, so that their hands are centered and below the belt, this indicates fear or lack of confidence. This is called the “fig leaf” position, because they feel vulnerable and exposed. This position makes them feel covered and protected. This is commonly seen when someone is making a presentation in front of a large group.

A vivid example I witnessed was during an early round debate of a U.S. Presidential primary election. During introductions, several candidates stood at the front of the stage before retreating behind their podiums. I was amazed to see many of them in the fig leaf position. They were all undoubtedly coached to avoid this glaring signal of weakness. Yet, the high-stakes pressure won out and they could not resist. The winner of the primary and national elections was one of those on the stage who had not used the fig leaf position and avoided other negative body language, including pacifying.

Itchy Nose

When a person touches or rubs their nose, it usually indicates an increase in stress. This is because a sudden change in stress can nearly instantly dry out the nose and nasal hairs. This causes the nose to itch, drawing touch.

Nail Biting

When someone is biting their nails, it indicates a lack of confidence. This is another example of pacifying body language.

Pressure Blow Out

When somebody exhales with their cheeks puffed out, it indicates a high level of stress. It is as if they are an over-inflated tire in need of releasing pressure.

Change in Gravity – Hands

When someone's hands appear to be experiencing less gravity, they are feeling very positive. Their arms move upward quickly. Picture those watching their sports team win the game. All hands instantly fly upward. Also, when someone hears an exciting idea, their hands quickly move upwards as if the person were about to gesture, eager to second the idea, or add suggestions.

In contrast, when a person's hands appear to be experiencing more gravity, they are feeling very negative. Their arms appear heavy. If they are seated, their hands may stay completely flat and in full contact with the table. When walking, their hands may appear to hang completely down, and even reach further down than usual.

Change in Gravity – Feet

When someone's feet appear to be experiencing less gravity, they are feeling very positive. The expression is that they feel "lighter than air." Their feet leave the ground more than normal and move more quickly. Instead of walking normally, they may be skipping, where their feet spend less time than normal touching the ground as they move along more quickly. Instead of standing still with their feet continually on the ground, they may be tilting one foot back on its heel with the toes elevated, or bouncing up on the balls of both feet, or even be jumping up and down.

In contrast, when someone's feet appear to be experiencing more gravity, they are feeling very negative. The expression is that they feel "the weight of the world is on them." Their feet stay in contact with the ground more than normal and they move more slowly. Instead of walking normally, they may be trudging along – dragging their feet across the ground and walking more slowly.

Arms Spread Across Chairs

When somebody has one or both arms spread across the adjacent chairs, this indicates that they are comfortable. This is an example of a territorial display, because their arms are taking up more space.

Hooding

When a person has both hands behind their head, with fingers interlaced, elbows pointing outwards, and leaning backwards, this indicates that they are comfortable. They are usually the person with the most authority in the room or they consider themselves the person with the most legitimacy. This is also a territorial display, because their elbows are taking up more space.

The Thinker Pose

When someone is touching their chin with one hand, and holding it there, it indicates they are thinking. One example is posing like Rodin's sculpture, "The Thinker."

Preening

When someone makes slight adjustments to make themselves more presentable just prior to a one-on-one meeting, it indicates respect for the person with whom they are meeting. Examples include:

- Pulling a collar upright
- Tightening a necktie
- Straightening a garment

However, when someone is preening during an active conversation, especially while averting eye contact, it indicates a high level of disrespect. The classic example is when someone removes lint from their clothing, scrutinizes it, and flicks it away.

Shielding Eyes

When someone is covering their eyes, it usually indicates that they saw or heard something negative. It can also be that they are thinking something negative. It is as if, by averting their eyes, they are trying to avoid or negate it.

Squinting

When a person suddenly squints their eyes, it usually indicates that they saw or heard something negative. It is as if they are trying to sharpen their vision to deal with a nearby threat.

Legs Splayed

When a seated person spreads their legs farther apart than appears courteous to do, it indicates a territorial display. This is aggressive body language. This may indicate that they feel threatened.

Pointed Feet

People point their feet in the direction they want to go or towards the person they feel is more receptive. If someone shifts the direction their feet are pointing, then it indicates that they want to go in that direction. If someone changes the direction of their feet from one person towards a second person, then, it indicates they are more comfortable with the second person.

Headache Touch

When someone is touching their forehead or their temples as if they have a headache, it usually indicates discomfort (although they might actually have a headache). This is another example of pacifying body language.

Change in Gravity – Eyebrows

When greeting us, if a person's eyebrows instantly fly upwards, as if under less gravity, and they smile, they are feeling positive towards us. In contrast, if their eyebrows appear to be under more gravity (looking furrowed), they are feeling negative towards us.

Arms Reverse Akimbo

The “arms reverse akimbo” position is where a person is placing their hands on their hips, with the thumb pointing forward and the other fingers pointing backwards. This is very similar in description to arms akimbo, but the thumb and fingers are pointing in the opposite direction and the elbows may be pointing slightly backwards. Although both are similar in positioning, it looks completely different and it has a nearly opposite meaning to arms akimbo. Arms reverse akimbo indicates curiosity, receptiveness, or even submissiveness. This is because the hands look defenseless, almost as if they are putting their hands behind their back.

To see how different arms akimbo and arms reverse akimbo look and feel, try it yourself. Stand in front of a mirror and assume the arms akimbo position. This both looks and feels powerful. Now, simply rotate your hands until you assume the arms reverse akimbo position. You will immediately feel less powerful and even vulnerable, and the posture no longer looks assertive.

Palms Down

When someone is speaking and has both palms facing down, with all fingers spread apart and cupped downwards, this indicates strength and confidence. This has the impact of emphasizing the verbal point being made. This is another example of a territorial display, as the fingers are spreading out, taking up more space.

Palms Up

When a person has both palms facing up, this indicates submissiveness to, and/or in need of something from, the person they are facing.

Stroking Legs

When someone is stroking their legs with their hands, it indicates that they are uncomfortable, specifically experiencing anxiety or lack of confidence. Stroking with faster speed or with more intensity indicates increasing discomfort. This is another example of pacifying body language.

Visibility of Torso

The level to which an individual is making their torso visible, indicates the extent to which they are, or want to be perceived as, being open and/or trustworthy. Here, we illustrate with the two extreme cases. Consider someone who wears clothing that completely obscures their torso. An example is a dictator. Dictators tend to wear jackets, often as part of a military uniform, that completely and thickly hides their torso. Often, these are further adorned with sashes across the torso, medals, and other adornments. These are physical blockers. This is like a permanent crossing arms gesture. Their message is: "I am not open or subject to the suggestions of the people." Now, consider someone who wears clothing that affords maximal viewing of

their torso. An example is a candidate in a U.S. political election. Candidates tend to wear jackets that button low, leaving as much of their torso visible as possible. This is intended to engender trust. It says “I am not hiding from you. I am, and will be, responsive to your input.”

Jaw Jutting Out

When someone juts their jaw out towards another, it indicates confidence, dominance, or even arrogance. This is another example of a territorial display, where they are taking up more of the space, if ever slightly, between themselves and the other person.

Invading Space

When two people are speaking in a standing position and one invades the personal space boundary of the other, it may indicate that they are doing this intentionally as a territorial display. However, usually, this is the innocuous result of differences that are:

- **Environmental:** The two people have environments (e.g., culture) with different personal space boundaries; or
- **Individual:** The person invading the other’s personal space may just be a close-talker.

Touching Body or Item Repetitively

When someone is touching any part of their body, especially the neck, or an object, repeatedly, it indicates discomfort. This is often described as a nervous tick. This is another example of pacifying body language.

Lack of Eye Smile

A sincere smile is accompanied by an “eye smile,” which is a crinkling of the corners of the eyes. An insincere smile is a smile in mouth only. When someone wants to make others believe they are happy, they consciously move the corners of their mouth upward. They usually forget to mimic the genuine happiness emotion that would naturally engage their eyes.

About the Author

SIM SEGAL, FSA, CERA

Since this book is based on Segal's communication skills and his perspective as a technical professional, background on both is provided here.



COMMUNICATIONS PROFESSIONAL

Sim Segal has been highly trained in a wide range of communication skills in a corporate setting. Segal has successfully employed these skills to operate as a communications professional in a variety of communications capacities:

- **Educator:** Segal teaches and serves as lead faculty for a Master's-level course he developed on communication skills at Columbia University.
- **Author of book:** Segal is author of a book that was published by Wiley, a top-5 global publisher, and that is typically highly ranked in its category on Amazon.
- **Author of articles:** Segal has authored numerous articles in major publications, such as Forbes and American Banker.
- **Instructor:** Segal conducts executive training seminars on communication skills for technical professionals.
- **Podcast host:** Segal is former host of a podcast, where he conducted 240 episodes involving interviews of senior executives.

- **Chief editor:** Segal formerly served as chief editor of global industry publication The Stepping Stone, covering topics ranging from communication skills to leadership.
- **Speaker:** Segal is a frequently invited speaker at industry conferences (200+ presentations), renowned for his dynamic and engaging presentation style.
- **Media source:** Segal has been quoted in major publications such as the Wall Street Journal and Global Finance.
- **Board member:** Segal won two elections, with voting by global members, to his profession's board of directors.

TECHNICAL PROFESSIONAL

Sim Segal is president and founder of SimErgy Consulting, a firm specializing exclusively in enterprise risk management (ERM). Headquartered in Manhattan, SimErgy provides ERM consulting services to companies in all sectors, primarily in the U.S. and Canada. SimErgy also provides executive training on ERM. Segal is a globally-recognized ERM thought leader, renowned for his value-based ERM approach – an advanced yet practical approach that combines ERM and value-based management.

With 30+ years of experience in measuring and managing risk, Segal has ERM experience in a variety of sectors, such as: insurance; banking; credit cards; technology; consumer goods; biotechnology; telecommunications; hospitality; energy; services; timberland; education; non-profits; and government.

Segal is founder and director of the Columbia University Master of Science in ERM Program, which is the largest of its kind globally.

Segal is an instructor in the ABA Stonier Graduate School of Banking – a joint program of the American Bankers Association and Wharton – where he teaches the ERM portion of the program.

Segal is author of ERM book *Corporate Value of Enterprise Risk Management*, published by Wiley. The book has been well received by ERM professionals. It has also been adopted as required reading on the syllabi of the Society of Actuaries (SOA) and leading universities around the world. This book is typically highly ranked in its category on Amazon.

Segal has authored numerous articles in publications such as *Forbes*, *American Banker*, and *Corporate Finance Review*. He has been quoted in publications such as the *Wall Street Journal*, *Global Finance*, and *National Underwriter*. Segal is a frequently invited speaker to ERM conferences and has made 200+ ERM-related presentations. He has also conducted several ERM research studies.

Segal served as host of ERM podcast *Risk Radio*, conducting 240 episodes involving interviews of ERM executives.

Segal has held several leadership roles in the actuarial profession, such as:

- Vice president, SOA Board of Directors (two-year term: 2009-2011) (elected by global members)
- Member, SOA Board of Directors (three-year term: 2006-2009) (elected by global members)
- Member, editorial Board of *The Actuary*, an international publication (2005-2006)
- President, Actuarial Society of Greater New York (2002-2003)
- Chair, SOA Management & Personal Development Section (2002-2003)
- Lead actuary, Actuarial Foundation's Advancing Student Achievement Program (2004-2006)

Segal has served in numerous capacities on industry committees, such as:

- Inaugural chair of SOA Risk Committee, leading the design and implementation of its ERM program (2009-2011)
- Chief editor of *Risk Management*, a quarterly international ERM publication (2008-2009)

- Vice chair of Canadian Institute of Actuaries (CIA) ERM Applications Committee (2013-2015)
- Member of Joint Risk Management Section's ERM Symposium Program Committee, jointly run by the SOA, CIA and Casualty Actuarial Society (CAS) (2010-2016)

Prior to SimErgy, Segal led ERM consulting practices at Deloitte Consulting, Aon, and Watson Wyatt. Prior to his consulting experience, Segal was an officer at MetLife, where he was a key player in the first successful adoption of economic capital by a U.S. insurer, assisting in its integration into key company processes, such as strategic planning, capital management, and pricing. Segal also led one of the internal teams to convert MetLife into a stock company.

Segal graduated summa cum laude from Wayne State University, with a B.A. in mathematics. He is a Fellow of Society of Actuaries (FSA) and a Chartered Enterprise Risk Analyst (CERA). Segal is one of 40 ERM experts initially awarded the CERA for "thought leadership and significant contributions to advance the practice of ERM."

Who We Are

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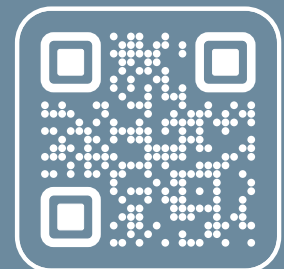
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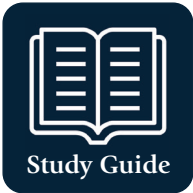


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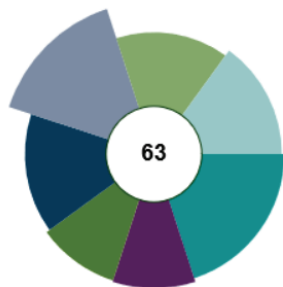
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QUESTION 19 OF 704 Question # Go! Prev Next

Question Difficulty: Advanced

An airport purchases an insurance policy to offset costs associated with excessive amounts of snowfall. The insurer pays the airport 300 for every full ten inches of snow in excess of 40 inches, up to a policy maximum of 700.

The following table shows the probability function for the random variable X of annual (winter season) snowfall, in inches, at the airport.

Inches	[0,20)	[20,30)	[30,40)	[40,50)	[50,60)	[60,70)	[70,80)	[80,90)	[90,inf)
Probability	0.06	0.18	0.26	0.22	0.14	0.06	0.04	0.04	0.00

Calculate the standard deviation of the amount paid under the policy.

Possible Answers

A 134
 ✓ 235
 ✗ 271
 D 313
 E 352

Help Me Start

Find the probabilities for the four possible payment amounts: 0, 300, 600, and 700.

Solution

With the amount of snowfall as X and the amount paid under the policy as Y , we have

y	$f_Y(y) = P(Y = y)$
0	$P(Y = 0) = P(0 \leq X < 50) = 0.72$
300	$P(Y = 300) = P(50 \leq X < 60) = 0.14$
600	$P(Y = 600) = P(60 \leq X < 70) = 0.06$
700	$P(Y = 700) = P(X \geq 70) = 0.08$

The standard deviation of Y is $\sqrt{E(Y^2) - [E(Y)]^2}$.

$$E(Y) = 0.14 \times 300 + 0.06 \times 600 + 0.08 \times 700 = 134$$

$$E(Y^2) = 0.14 \times 300^2 + 0.06 \times 600^2 + 0.08 \times 700^2 = 73400$$

$$\sqrt{E(Y^2) - [E(Y)]^2} = \sqrt{73400 - 134^2} = 235.465$$

Common Questions & Errors

Students shouldn't overthink the problem with fractional payments of 300. Also, account for probabilities in which payment cap of 700 is reached.

In these problems, we must distinguish between the REALT RV (how much snow falls) and the PAYMENT RV (when does the insurer pay)? . The problem states "The insurer pays the airport 300 for every full ten inches of snow in excess of 40 inches, up to a policy maximum of 700 ." So the insurer will not start paying UNTIL AFTER 10 full inches in excess of 40 inches of snow is reached (say at 50+ or 51). In other words, the insurer will pay nothing if $X < 50$.

Rate this problem 👍 Excellent 👎 Needs Improvement 👎 Inadequate

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