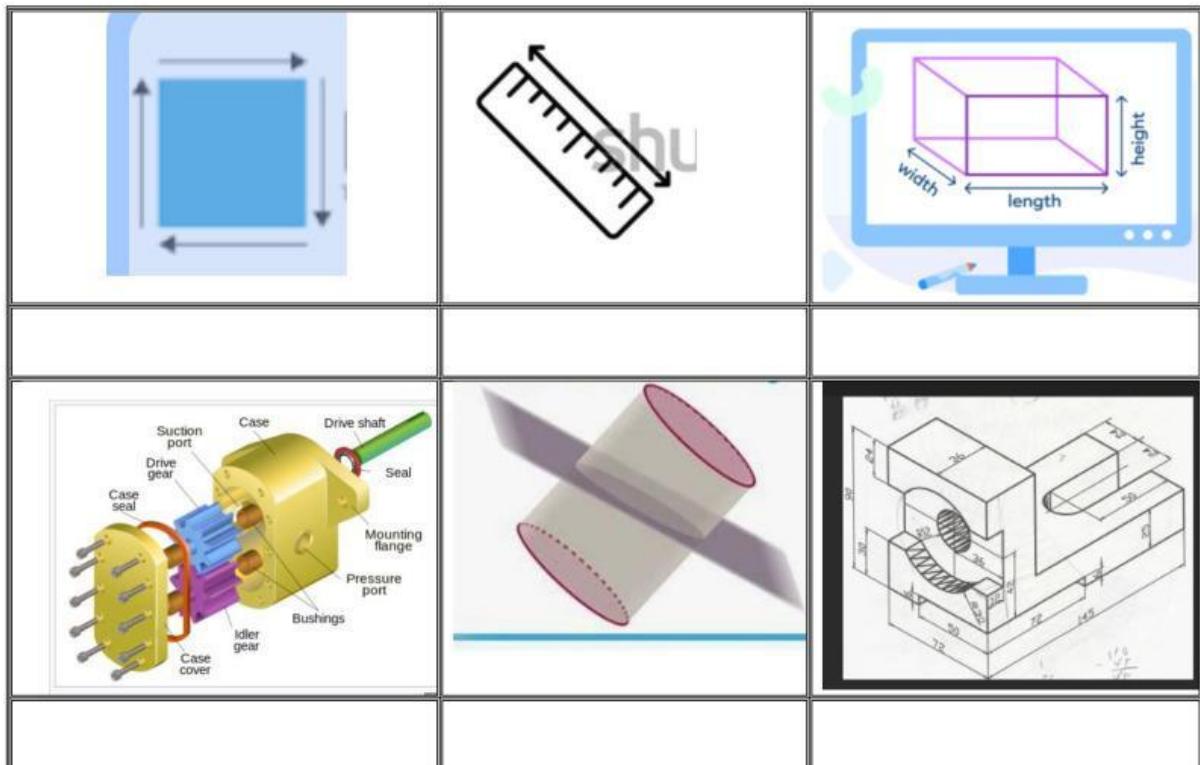


1 course. Unit 8. Dimensions and drawings.

SURNAME NAME AND GROUP

CAD Drawing	Perimeter	Geometry	Schematics	Scale	Diagram
Exploded view	Cross-section	Dimensions	Length	Width	Depth

Task 1. Look at picture and write the term it represents below.



Task 2. Match the terms with their functions.

CAD Drawing	Perimeter	Geometry	Schematics	Scale	Diagram
Exploded view	Cross-section	Dimensions	Length	Width	Depth

1. CAD Drawings:	a) They illustrate how components are connected, helping engineers understand the functionality and design of electronic devices.
2. Schematics:	b) It is important for ensuring that components fit within the designated space and meet design specifications.
3. Dimensions:	c) It allows for accurate representation of large objects on paper or screens, making complex designs easier to understand.
4. Width:	d) They allow engineers to create precise designs, visualize components, and modify them easily.
5. Perimeter:	e) They must be accurate for ensuring that parts fit together correctly and function as intended.
6. Scale:	f) In device design, if an engineer knows this, it will help in calculating space requirements and material needs.
7. Diagrams:	g) It helps engineers and technicians see how parts fit together and aids in assembly and maintenance.
8. Exploded View:	h) Engineers use it to calculate dimensions, angles, and other essential aspects of design and layout.
9. Cross-section:	i) They are used to show relationships between parts or processes in a device.
10. Geometry:	j) This helps engineers analyze the arrangement and functionality of components inside a device.

Task 3. Match the adjectives with the appropriate term.

- o Detailed _____
- o Complex _____
- o Total _____
- o Maximum _____
- o Fixed _____
- o Informative _____

Task 4. Fill in the gaps with the most appropriate words from the list.

1. Engineers analyzed the _____ of the components, paying close attention to their length and width for optimal fit.

2. The _____ for the new electronic device included detailed schematics to illustrate the circuit layout.
3. By examining a _____ of the device, they could identify potential areas for improvement in airflow.
4. To calculate the _____ of the device's housing, they used precise measurements from the design.
5. They also measured the _____ of the casing to ensure all parts would fit securely inside.
6. Maintaining the correct scale is vital when creating a _____ of the internal mechanisms of the device.
7. The _____ of the assembly allowed engineers to visualize how each component interacts with others.
8. Mastering _____ is essential for engineers, as it aids in designing complex devices with accurate measurements.

Task 5. Read the text and answer the questions.

A team of engineers at TechNova was buzzing with excitement. They were on a mission to develop a cutting-edge wearable health monitor, and the atmosphere in the lab was electric.

“Alright, team! Let’s start with the **CAD drawing**,” called out Maya, the project lead. As she projected the initial design onto the screen, the team leaned in, scrutinizing every detail. “We need to get the **schematics** right so our sensors communicate perfectly.”

“Don’t forget to check the **dimensions**,” added Ravi, the electrical engineer. “We’ll need to nail down the **length**, **width**, and **depth** of the housing to fit comfortably on a wrist.” He scribbled notes as they discussed how each part would integrate seamlessly.

“Let’s calculate the **perimeter** of the device,” said Sarah, the mechanical engineer. “That’ll help us determine how much material we need for the casing. We want it sturdy but lightweight.”

“Good point! And we must maintain the correct **scale** in our drawings,” Maya emphasized, flipping through the design files. “It’ll prevent any surprises down the line.”

As they moved to create an **exploded view** of the assembly, Ravi exclaimed, “This is so helpful! I can see how the battery and sensors will fit together now.”

Sarah nodded. “And the **cross-section** we made earlier really clarified how to optimize space for everything inside. It’s coming together!”

“Geometry is our best friend right now,” Maya said with a grin. “With precise angles and measurements, we can ensure everything functions perfectly.”

After weeks of collaboration, brainstorming, and a few late nights fueled by coffee, the team finally held their prototype—a sleek, stylish health monitor. High-fives and cheers erupted as they realized their hard work had paid off. They were ready to revolutionize the world of wearable technology.

1. What does a **CAD drawing** help engineers visualize?
 - A) The marketing plan
 - B) The internal software
 - C) The design of the device
2. Why were **schematics** important for the team working on the health monitor?
 - A) They showed how to market the product.
 - B) They illustrated the connections between sensors.
 - C) They provided design requirements.
3. Which **dimensions** were the engineers most concerned with for the device?
 - A) Length, width, and depth
 - B) Color and texture
 - C) Cost and weight
4. How did calculating the **perimeter** assist the engineers?
 - A) It determined the device's color.
 - B) It helped estimate the material required.
 - C) It influenced the software design.
5. Why is maintaining the correct **scale** in drawings essential?
 - A) It makes the project cheaper.
 - B) It allows for faster production.
 - C) It helps avoid design surprises.
6. What advantage does an **exploded view** provide in the design process?
 - A) It shows the cost breakdown.
 - B) It allows visualization of individual components.
 - C) It simplifies the user interface.
7. How does a **cross-section** contribute to the engineering process?
 - A) It reveals the internal structure of the device.
 - B) It shows how to advertise the product.
 - C) It provides aesthetic design options.
8. Why is knowledge of **geometry** crucial for engineers?
 - A) It helps in calculating precise measurements.
 - B) It assists in designing structural elements.
 - C) It makes projects less expensive.