Surface Development
Instructions

Answer all questions. Choose the best answer for multiple-choice and true/false questions. Answer the written-response questions in complete sentences.

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1. What is surface development? *(1 point)*
    a. A method for calculating the volume of a solid
    b. A flat layout that represents a 3D object
    c. The process of assembling 3D shapes
    d. A method for finding the height of a frustum

2. Which industry heavily relies on surface development? *(1 point)*
    a. Agriculture
    b. Sheet Metal Industry
    c. Textile Industry
    d. Automotive Repairs

3. Why is surface development important in manufacturing? *(1 point)*
    a. It helps reduce waste and ensures precision.
    b. It increases the weight of the product.
    c. It eliminates the need for templates.
    d. It simplifies the painting process.

4. A frustum is best described as: *(1 point)*
    a. A solid with a square base and perpendicular sides.
    b. A solid with the top cut off parallel to the base.
    c. A solid that has no edges or vertices.
    d. A solid made of multiple materials.

5. Which of the following is a common use of surface development in the sheet metal industry? *(1 point)*
    a. Creating designs for textiles
    b. Making flat patterns for air ducts
    c. Calculating the weight of a metal rod
    d. Building wooden furniture

6. Surface development is only used for artistic purposes. *(1 point)*
    a. True
    b. False

7. An oblique solid has sides that are not perpendicular to its base. *(1 point)*
    a. True
    b. False

8. Surface development reduces material waste in manufacturing. *(1 point)*
    a. True
    b. False

9. A cone cannot be developed into a flat layout. *(1 point)*
    a. True
    b. False

10. Templates created from surface development ensure components fit accurately. *(1 point)*
    a. True
    b. False

11. Explain why surface development is essential in the sheet metal industry. Provide at least two reasons and include examples in your explanation. *(4 points)*

12. Describe one real-world product or structure you've seen that likely used surface development during manufacturing.
    Explain why accurate surface development was important for that product or structure. *(4 points)*

13. Explain the difference between the radial method and the parallel method of surface development. Give one example for each method. *(4 points)*