

Reindeer Habitat

Name: _____

6th Grade – Design Task Assessment

Date: _____

Directions: For each of the questions below, choose the BEST answer.

1. Which of the following is an example of a habitat?

- A. Consumer
- B. Forest
- C. Producer
- D. Organism

2. Which of the following is an abiotic factor?

- A. Tree
- B. Bush
- C. Deer
- D. Rock

3. The number of organisms that can live in an ecosystem is affected by:

- A. biotic factors only
- B. abiotic factors only
- C. both biotic and abiotic factors
- D. neither biotic nor abiotic factors

Use the following information to answer questions 4 and 5.

A zoo has 3 giraffes, 2 red panda bears, 2 snow leopards, 5 dolphins, and 4 zebras.

4. What is the ratio of red panda bears to dolphins?

- A. 5 to 2
- B. 2 to 5
- C. 1 to 1
- D. 2 to 11

5. What is the ratio of animals at the zoo that live in the water to those that live on land?

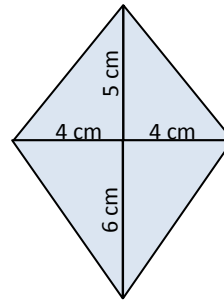
- A. 1 to 1
- B. 1 to 2
- C. 11 to 5
- D. 5 to 11

6. Which of the following is a biotic factor?

- A. Number of predators.
- B. Type of soil.
- C. Temperature of air.
- D. Availability of water.

7. How much paper will Maria need to make the shape shown below? The equation for the surface area of a triangle is: $\frac{1}{2} \cdot \text{base} \cdot \text{height}$.

- A. 10 cm^2
- B. 12 cm^2
- C. 22 cm^2
- D. 44 cm^2



8. If one animal needs 12 square meters of grass to graze upon, how many square meters of grass will 10 of these animals need?

- A. 1.2 m^2
- B. 12 m^2
- C. 100 m^2
- D. 120 m^2

9. What is the surface area of a circle with a radius (r) of 2 meters? The equation for the surface area of a circle is: $\pi \cdot r^2$. Use 3.14 for the value of π .

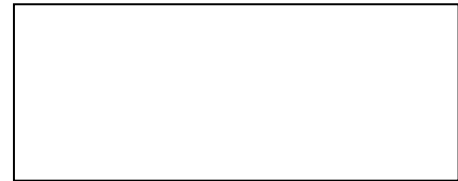
- A. 2.56 m^2
- B. 4.56 m^2
- C. 8.56 m^2
- D. 12.56 m^2

10. Calculate the surface area of the rectangle shown below using the length (l) and width (w). The equation for the surface area of a rectangle is: $l \cdot w$.

$l = 5 \text{ cm}$

- A. 3 cm^2
- B. 5 cm^2
- C. 15 cm^2
- D. 16 cm^2

$w = 3 \text{ cm}$



11. Kyle plans to build a scale model of his house. What materials might he find most useful?

- A. Spring scale, wrapping paper, tape
- B. Triple beam balance, ruler, tape
- C. Graduated cylinder, wrapping paper, tape
- D. Ruler, construction paper, tape

12. Jim is calculating the surface area of a gift box in order to determine the amount of wrapping paper he needs to cover the box. Which is the *best* tool for him to use?

- A. Graduated cylinder
- B. Protractor
- C. Spring scale
- D. Ruler

Use the following information to answer questions 13-15.

A park district plans to restore a wetland area. The park district hires an environmental engineering company to study the area and design a wetland habitat. A bird watching organization reads about the project in the newspaper and is interested in the results of the study.

13. Who is the client?

- A. Bird watching group
- B. Environmental engineering company
- C. Wetland animals
- D. Park district

14. What is the best description of the design problem?

- A. Meet with the bird watching group.
- B. Create a wetland habitat.
- C. Provide information to the local newspaper.
- D. Build a playground in the park.

15. The environmental engineering company has identified the design problem. Which statement below best describes what part of the design process is next?

- A. Redesign their solution to the design problem.
- B. Communicate their final findings.
- C. Brainstorm possible solutions.
- D. Test and evaluate the design.