

## Standard 4 Practice Set

### Knowledge of the appropriate use of various types of reasoning

- Inductive
- Deductive
- Spatial
- Proportional

### Understanding valid and invalid forms of reasoning

#### **Inductive Reasoning**

1. Find the next number in the sequence.

1      3      6      10      15      \_\_\_\_\_      \_\_\_\_\_

2. The sum of the angles in a triangle (3 sides) is 180; the sum of the angles in a quadrilateral (4 sides) is 360; the sum of the angles of a pentagon (5 sides) is 540. What is the sum of the angles of an octagon (8 sides)?

#### **Deductive Reasoning**

1. Every time a batter reaches first base, the next batter hits a double. Every time a batter hits a double, the runner on first scores. Jon reaches first base. What can you deduce about Jon?
2. If the density (in  $\text{g/cm}^3$ ) of a substance is less than 1, then the substance will float. The density of oak is between 0.6 and 0.9. We can thus conclude that \_\_\_\_\_.

### Proportional Reasoning

Compare the food intake vs. body weight of the animals listed below to determine which animal eats the most by body weight and which animal eats the least by body weight.

Animal	Body Weight	Daily Food Intake
Vampire Bat	28 g	28 g
Hamster	100 g	11 g
Elephant	4100 kg	180 kg
Hummingbird	3.1 g	2 g

Based on body weight, which animal eats the least?

Which animal eats the most?

### Spatial Reasoning

1. Rhonda had signed up for games at the school fun night. For the first set of games, seven other people were assigned to her group to make up four pairs of partners. Rhonda's group list showed her name as well as Darien, Anna, Jon, Christina, Joanne, Marcel, and Michael. When the games started, Darien and his partner were to the left of Marcel. Across from Darien was Rhonda, who was to the right of Jon. Darien's brother's partner, Christina, was across from Marcel. Joanne was not on Marcel's right. Can you name the four pairs of partners?

## Answer Key for Standard 4 Practice Set

### Inductive Reasoning

1. 21, 28
2. 1,080

### Deductive Reasoning

1. John scores.
2. Oak floats in water.

### Proportional Reasoning

Least: Elephant

Most: Vampire Bat

### Spatial Reasoning

Darien/Joanne

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Marcel/Jon

| Table |

Christina/Michael

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Rhonda/Anna