## **ISAT** Sample Book





2006

## **Sample Items for Reading and Mathematics**

**ILLINOIS STATE BOARD OF EDUCATION** 

999-8334-56-X







Mathematics

9

The inequality  $70^{\circ} < x < 80^{\circ}$ represents the range of the ideal water temperature, in degrees Fahrenheit, for Sammy's fish.

Which statement is true about the situation?

- **A** The ideal water temperature is less than 70 °F.
- **B** The ideal water temperature is greater than 80 °F.
- **C** The ideal water temperature is between 70 °F and 80 °F.
- D The ideal water temperature is less than 70 °F or greater than 80 °F.







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The circle graph below represents a total of 240 animals at a zoo. The shaded sector represents the number of monkeys at this zoo.





## 15

Mike has only 2 red apples and 3 green apples in a bowl. Without looking he chooses an apple and gives it to his sister. Then he chooses an apple for himself.





## **Answer Key with Assessment Objectives Identified**

ltem Number	Correct Answer	Assessment Objective
1	С	<b>6.8.07</b> Identify and locate rational and irrational numbers (e.g., $\pi$ , $\sqrt{2}$ , $\sqrt{5}$ ) on a number line.
2	В	<b>6.8.09</b> Solve problems and number sentences involving addition, subtraction, multiplication, and division using rational numbers, powers, and roots.
3	С	<b>6.8.18</b> Solve number sentences and problems involving fractions, decimals, and percents (e.g., percent increase and decrease, interest rates, tax, discounts, tips).
4	D	<b>7.8.04</b> Solve problems involving the volume or surface area of a right rectangular prism, right circular cylinder, or composite shape using an appropriate formula or strategy.
5	D	<b>7.8.05</b> Solve problems involving unit conversions within the same measurement system for length, weight/mass, capacity, square units, and measures expressed as rates (e.g., converting feet/second to yards/minute).
6	С	<b>8.8.01</b> Analyze, extend, and create sequences or linear functions, and determine algebraic expressions to describe the nth term of a sequence.
7	D	<b>8.8.08</b> Translate between different representations (table, written, graphical, or pictorial) of whole number relationships and linear expressions.
8	A	<b>8.8.09</b> Interpret the meaning of slope and intercepts in linear situations.
9	С	<b>8.8.11</b> Represent and analyze problems with linear equations and inequalities.
10	D	<b>9.8.02</b> Solve problems that require knowledge of triangle and quadrilateral properties (e.g., triangle inequality).
11	A	<b>9.8.08</b> Identify or analyze relationships of angles formed by intersecting lines (including parallel lines cut by a transversal) and angles formed by radii of a circle.
12	В	<b>9.8.11</b> Solve problems involving congruent and similar figures.
13	В	<b>10.8.01</b> Read, interpret (including possible misleading characteristics), and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two or three circles), chart/table, line graph, scatterplot, circle graph, stem-and-leaf plot, or histogram.
14	A	<b>10.8.04</b> Identify or draw a reasonable approximation of the line of best fit from a set of data or a scatter plot, and use the line to make predictions.
15	A	<b>10.8.06</b> Solve problems involving the probability of an event composed of repeated trials, compound events (including independent events), or future events with or without replacement.

To view all the mathematics assessment objectives, download the *Illinois Mathematics Assessment Framework* for Grades 3–8 online at www.isbe.net/assessment/IAFindex.htm.