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TExES Core Subjects EC-6: English Language Arts (901)

Free Practice Sample: 9 Questions with Answer Key

1. A fourth-grade class is exploring the relationship between the number of tables (t) and the number of chairs (c) needed if each table seats 4 people. Which representation best shows this functional relationship for early learners?

A. the abstract formula c = 4t
B. a verbal rule, input-output table, and visual model together
C. primarily written word problems without visuals
D. complex graphing on a coordinate plane

2. All squares are rectangles, but not all rectangles are squares because squares have the additional property of

A. having four equal sides
B. having four right angles
C. being a parallelogram
D. having two pairs of parallel sides

3. If two angles are complementary, their measures sum to

A. 45°
B. 90°
C. 180°
D. 360°

4. Similar figures have the same shape but possibly different sizes. The corresponding sides of similar figures are

A. equal in length
B. proportional
C. perpendicular
D. parallel

5. Two lines that intersect to form right angles are called

A. parallel lines
B. perpendicular lines
C. skew lines
D. coincident lines

6. A student writes '5 + 3 = 8 + 1 = 9' as a single equation. This response indicates a misunderstanding of

A. basic addition facts
B. the commutative property of addition
C. how to write numerals correctly
D. the meaning of the equals sign

7. A food web differs from a food chain because a food web

A. is simpler with fewer organisms
B. exists primarily in aquatic ecosystems
C. includes primarily plants
D. shows multiple interconnected feeding relationships

8. A function table shows that when input doubles, output also doubles. This indicates the function is

A. additive (output = input + constant)

B. multiplicative (output = constant × input)

C. quadratic (output = input²)

D. inverse (output = constant ÷ input)

9. Given the function table: Input (x): 1, 2, 3, 4 Output (y): 4, 7, 10, 13 Which equation represents the relationship between x and y?

A. $y = x + 3$

B. $y = 3x + 1$

C. $y = 4x$

D. $y = x \times 4$

Answer Key

1. B — The correct answer is B. Multiple representations (verbal, tabular, visual) help students see the same relationship in different ways, deepening understanding of functions before abstract notation. Choice A jumps to abstraction. Choice C limits representations. Choice D is premature without other foundations.

2. A — The correct answer is A. Both squares and rectangles have four right angles, are parallelograms, and have two pairs of parallel sides. The distinguishing feature is that squares have four equal sides (congruent sides). Choices A, C, and D are shared properties.

3. B — The correct answer is B. Complementary angles sum to 90° (a right angle). For example, 30° and 60° are complementary. Choice A is an arbitrary value. Choice C describes supplementary angles. Choice D is a full rotation.

4. B — The correct answer is B. In similar figures, corresponding sides are proportional—they have the same ratio. For example, if one triangle has sides 3, 4, 5 and another has sides 6, 8, 10, the ratio is 1:2. Choice A describes congruent figures. Choices C and D describe line relationships.

5. B — The correct answer is B. Perpendicular lines meet at 90° angles (right angles). Choice A (parallel) lines never intersect. Choice C (skew) lines are in different planes and don't intersect. Choice D (coincident) lines are the same line.

6. D — The correct answer is D. The student uses '=' as 'and the answer is' rather than understanding it means 'is equivalent to.' The equation 5 + 3 = 8 + 1 is mathematically false (8 ≠ 9). Relational understanding of equals is crucial for algebra. Choice A—the addition is correct. Choices C and D are unrelated.

7. D — The correct answer is D. Food webs show complex, interconnected feeding relationships among many organisms, reflecting real ecosystem complexity. Food chains show simple linear relationships. Choices A, C, and D incorrectly describe food webs.

8. B — The correct answer is B. When input doubles and output doubles proportionally, this indicates a multiplicative/proportional relationship (y = kx). For example, if y = 3x: when x = 2, y = 6; when x = 4, y = 12. Choice A adds constant (doubling input doesn't double output). Choices C and D show different relationships.

9. B — The correct answer is B. Testing y = 3x + 1: when x = 1, y = 3(1) + 1 = 4 ✓; x = 2, y = 3(2) + 1 = 7 ✓; x = 3, y = 3(3) + 1 = 10 ✓; x = 4, y = 3(4) + 1 = 13 ✓. Choice A gives (4, 5, 6, 7). Choice C gives (4, 8, 12, 16). Choice D same as C.

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