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# Common Core State Standards Correlation

Each question in *Critical Thinking: Test-taking Practice for Math (Grade 4)* meets one or more of the following Common Core State Standards © Copyright 2010. National Governors Association Center for Best Practices and Council of Chief State School Officers. All rights reserved. For more information about these standards, go to <http://www.corestandards.org/> or <http://www.teachercreated.com>.

Operations & Algebraic Thinking	Problem #s
<b>Use the four operations with whole numbers to solve problems.</b>	
<b>Math.4.OA.A.2</b> Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	29–30
<b>Math.4.OA.A.3</b> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	31–32, 33–36
<b>Gain familiarity with factors and multiples.</b>	
<b>Math.4.OA.B.4</b> Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range of 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	37–40, 41–44
<b>Generate and analyze patterns.</b>	
<b>Math.4.OA.C.5</b> Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i>	45–48
<b>Number &amp; Operations in Base Ten</b>	
<b>Generalize place value understanding for multi-digit whole numbers.</b>	
<b>Math.4.NBT.A.2</b> Read and write multi-digit numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	9–12
<b>Math.4.NBT.A.3</b> Use place value understanding to round multi-digit whole numbers to any place.	5–8, 25–28
<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>	
<b>Math.4.NBT.B.4</b> Fluently add and subtract multi-digit whole numbers using the standard algorithm.	1–4
<b>Math.4.NBT.B.5</b> Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	13–16, 17–20
<b>Math.4.NBT.B.6</b> Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	21–24

<b>Number &amp; Operations—Fractions</b>	<b>Problem #s</b>
<b>Extend understanding of fraction equivalence and ordering.</b>	
<b>Math.4.NF.A.2</b> Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$ , $=$ , or $<$ , and justify the conclusions, e.g., by using a visual fraction model.	49–52
<b>Build fractions from unit fractions.</b>	
<b>Math.4.NF.B. 3a</b> Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	53–54
<b>Math.4.NF.B. 3c</b> Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	57–60, 61–64
<b>Math.4.NF.B. 3d</b> Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	55–56
<b>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</b>	
<b>Math.4.NF.B. 4a</b> Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$ . For example, use a visual model to represent $\frac{5}{4}$ as the product $5 \times (\frac{1}{4})$ , recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$ .	65–66
<b>Math.4.NF.B.4c</b> Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.	67–68, 69–72
<b>Understand decimal notation for fractions, and compare decimal fractions.</b>	
<b>Math.4.NF.C.7</b> Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , or $<$ , and justify the conclusions, e.g., by using a visual model.	73–76
<b>Measurement &amp; Data</b>	
<b>Solve problems involving measurement and conversion of measurements.</b>	
<b>Math.A.MD.A.1</b> Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	77–80, 81–82
<b>Math.A.MD.A.2</b> Use the four operations to solve word problems involving distances, intervals of time liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	83–84, 85–88
<b>Math.A.MD.A.3</b> Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	89–92
<b>Geometric measurement: understand concepts of angle and measure angles.</b>	
<b>Math.A.MD.C.7</b> Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	97–100
<b>Geometry</b>	
<b>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</b>	
<b>Math.4.GA.1</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	93–96

# Test A

Name: \_\_\_\_\_

Directions: Read each problem carefully and select the best answer.

49. Choose the correct symbol to make a true statement.

$$\frac{1}{4} \square \frac{4}{12}$$

- A. =
- B. <
- C. >
- D. ≤

**SHOW YOUR WORK!**

Before you can compare fractions, they must have the same denominators.

50. Find an equivalent fraction.

$$\frac{12}{16} = \underline{\hspace{2cm}}$$

- A.  $\frac{1}{2}$
- B.  $\frac{6}{8}$
- C.  $\frac{3}{4}$
- D. both B and C

**SHOW YOUR WORK!**

Check all answer choices to make sure that you choose the best one.

51. Which fraction is the least?

- A.  $\frac{4}{8}$
- B.  $\frac{2}{5}$
- C.  $\frac{2}{4}$
- D.  $\frac{1}{2}$

**SHOW YOUR WORK!**

Eliminate answers by comparing the given fractions to  $\frac{1}{2}$  first.

52. Find the missing number to complete the pattern.

- A. 12
- B. 18
- C. 16
- D. 24

$$\frac{2}{3} = \frac{4}{6} = \frac{8}{12} = \frac{\quad}{24} = \frac{32}{48}$$

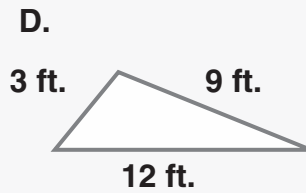
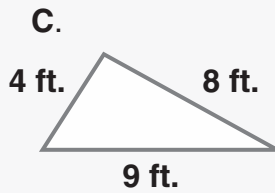
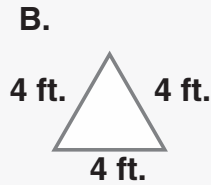
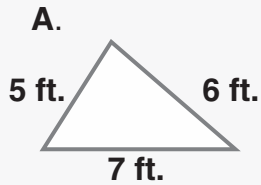
What is each numerator and denominator being multiplied by to find the next fraction?

# Test A

Name: \_\_\_\_\_

Directions: Read each problem carefully and select the best answer.

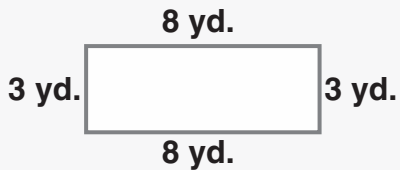
89. Which triangle has the greatest perimeter?



Perimeter is the sum of all the sides.

**SHOW YOUR WORK!**

90. What is the area of the rectangle?

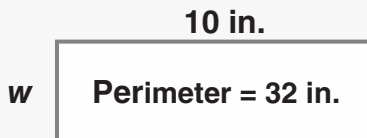


- A. 22 yd.
- B. 24 sq. yd.
- C. 11 sq. yd.
- D. 24 yd.

Area = length ( $l$ )  $\times$  width ( $w$ )

**SHOW YOUR WORK!**

91. What is the width of the figure?



- A. 22 in.
- B. 20 in.
- C. 6 in.
- D. 12 in.

**SHOW YOUR WORK!**

Multiply the length by 2. Subtract the answer from the perimeter, then divide by 2 to find the width.

92. What is the length of a room with a width of 2 meters and an area of 18 sq. m?

- A. 7 m
- B. 9 m
- C. 16 m
- D. 9 sq. m

You know the width. Use the area formula to find the length:  $18 = l \times 2$ .

# Test B

Name: \_\_\_\_\_

Directions: Read each problem carefully and select the best answer.

85. It is quarter to four. Danielle is going to the movies in 3 hours and 40 minutes. What time is Danielle going to the movies?

- A. 6:40
- B. 6:45
- C. 4:25
- D. 7:25

**SHOW YOUR WORK!**

Remember *quarter to 4* is the same as 3:45.

86. The baseball game ended at the time shown on the clock. The game had started 2 hours and 55 minutes earlier. What time did the game start?

- A. 2:30
- B. 10:40
- C. 8:40
- D. 9:35



**SHOW YOUR WORK!**

87. Bill went to bed at 9:00 p.m. He woke up at 7:10 a.m. How long did Bill sleep?

- A. 10 hours
- B. 10 hours and 10 minutes
- C. 9 hours and 10 minutes
- D. 1 hour and 50 minutes

**SHOW YOUR WORK!**

Count the hours from 9:00 in the evening (*p.m.*) until 7:00 in the morning (*a.m.*). Now add the minutes from 7:00 until 7:10.

88. Starting at 2:20, Mandy read her book for 45 minutes. Then she went outside to play for 1 hour and 30 minutes. Which clock shows the time Mandy finished playing outside?

- A.
- B.
- C.
- D.

**SHOW YOUR WORK!**

**Test C****Name:** \_\_\_\_\_**Directions:** Read each problem carefully and select the best answer.

45. Some starfish have 9 arms. The table below shows how many arms are found on a given number of starfish. Will the next three values in the table be odd or even?

- A. odd, odd, odd  
 B. odd, even, odd  
 C. even, odd, even  
 D. even, even, even

Input: Starfish	Output: Arms
1	9
2	18
3	
4	
5	

46. What are the missing values in this table?

- A. \$17.00, \$59.50  
 B. \$17.00, \$68.00  
 C. \$34.00, \$68.00  
 D. \$32.00, \$64.00

Input: Hours Worked	Output: Money Earned
1	\$8.50
4	
3	\$25.50
6	\$51.00
8	

47. Given the function below, what are the missing values in the table?

- A. 17, 20  
 B. 11, 14  
 C. 60, 75  
 D. 7, 10

$m = n - 5$	
Input: $n$	Output: $m$
11	6
12	
13	8
14	9
15	

48. The number of blue markers that David has is 12 less than 2 times the number of red markers Debbie has. The number of markers David has ( $b$ ) depends on the number of markers Debbie has ( $r$ ). What are the missing values in this table?

- A. 48, 58  
 B. 72, 82  
 C. 18, 23  
 D. 60, 70

$b = 2r - 12$	
Input: $r$	Output: $b$
25	38
27	42
30	
33	54
35	