End-of-the-Year Test Grade 4

This test is quite long, so I do not recommend that your child/student does all of it in one sitting. Break it into parts and administer them on several days. Use your judgment.

This is to be used as a diagnostic test. Thus, you may even skip those areas and concepts that you already know for sure your student has mastered.

The test does not cover every single concept that is covered in the *Math Mammoth Grade 4 Complete Curriculum,* but all the major concepts and ideas are tested here. This test is evaluating the child's ability in the following content areas:

- addition and subtraction
- early algebraic thinking
- the order of operations
- graphs
- large numbers and place value
- rounding and estimating
- multi-digit multiplication
- word problems
- some basic conversions between measuring units
- measuring length
- time calculations
- long division
- the concept of remainder
- factors
- area and perimeter
- measuring and drawing angles
- classifying triangles according to their angles
- adding and subtracting fractions and mixed numbers (like fractional parts)
- equivalent fractions
- comparing fractions
- multiplying fractions by whole numbers
- the concept of a decimal (tenths/hundredths)
- comparing decimals

In order to continue with the Math Mammoth Grade 5 Complete Curriculum, I recommend that the child gain a score of 80% on this test, and that the teacher or parent review with him any content areas where he is weak. Children scoring between 70 and 80% may also continue with grade 5, depending on the types of errors (careless errors or not remembering something, vs. the lack of understanding). The most important content areas to master are multi-digit multiplication, long division, place value, and word problems. Again, use your judgment.

Instructions to the student:

Do not use the calculator. Answer each question in the space provided.

Instructions to the teacher:

My suggestion for grading is below. The total is 192 points. A score of 154 points is 80%.

Question	Max. points	Student score
Addition, Subtraction, Patterns, and Graphs		
1	2 points	
2a	1 point	
2b	2 points	
3	2 points	
4	6 points	
5	4 points	
6	2 points	
7	4 points	
8	3 points	
	subtotal	/ 26
Large Numbers and Place Value		
9	3 points	
10	2 points	
11	3 points	
12	3 points	
13	2 points	
14	3 points	
15	3 points	
16	4 points	
	subtotal	/ 23
Multi-Digit Multiplication		
17	6 points	
18	3 points	
19	8 points	
20	3 points	
21a	3 points	
21b	2 points	
21c	2 points	
21d	3 points	
	subtotal	/ 30

Question	Max. points	Student score
Time and Measuring		
22	2 points	
23	1 point	
24	3 points	
25	2 points	
26	6 points	
27	6 points	
28	2 points	
29	1 point	
30	2 points	
	subtotal	/ 25
Division and Factors		
31	4 points	
32	3 points	
33	4 points	
34a	3 points	
34b	2 points	
35	6 points	
36	4 points	
37	2 points	
38	4 points	
	subtotal	/ 32
Geometry		
39	2 points	
40	2 points	
41	3 points	
42	2 points	
43	2 points	
44	1 point	
45	2 points	
46	3 points	
	subtotal	/ 17

Question	Max. points	Student score
Fractions and Decimals		
47	1 point	
48	1 point	
49	3 points	
50	2 points	
51	4 points	
52	4 points	
53	2 points	
54	1 point	
55	3 points	
56	4 points	
57	4 points	
58	4 points	
59	4 points	
60	2 points	
	subtotal	/ 39
	TOTAL	**/ 192**

End-of-the-Year Test - Grade 4

Addition, Subtraction, Patterns, and Graphs

1. Subtract. Check by adding.

5,200 − 2,677 − 543	Add to check:

2. **a.** Round the prices to the nearest dollar. Use the rounded prices to estimate the total bill.

crackers $1.28, cheese $8.92, jam $3.77, butter $9.34.

b. Now, use the exact prices (not rounded prices). Mrs. Wood buys the items listed above and pays with $30. What is her change?

3. *Estimate* the cost of buying five notebooks for $0.87 each and two pencil cases for $1.24 each.

4. Calculate in the right order.

a. $3 \times (4 + 6) =$ _____ $100 - 4 \times 4 =$ _____	**b.** $3 \times 3 + 8 \div 4 =$ _____ $(7 - 3) \times 3 + 2 =$ _____	**c.** $20 \times 3 + 80 \div 1 =$ _____ $15 + 2 \times (8 - 6) =$ _____

5. Circle the number sentence that fits the problem. Then solve for x.

a. Alice had $35. Then she earned more money (x). Now she has $92. $\$35 + x = \$92$ OR $\$35 + \$92 = x$ $x =$ _____	**b.** Eric gave 24 of the cookies he had baked to a friend and now he has 37 cookies left. $37 - 24 = x$ OR $x - 24 = 37$ $x =$ _____

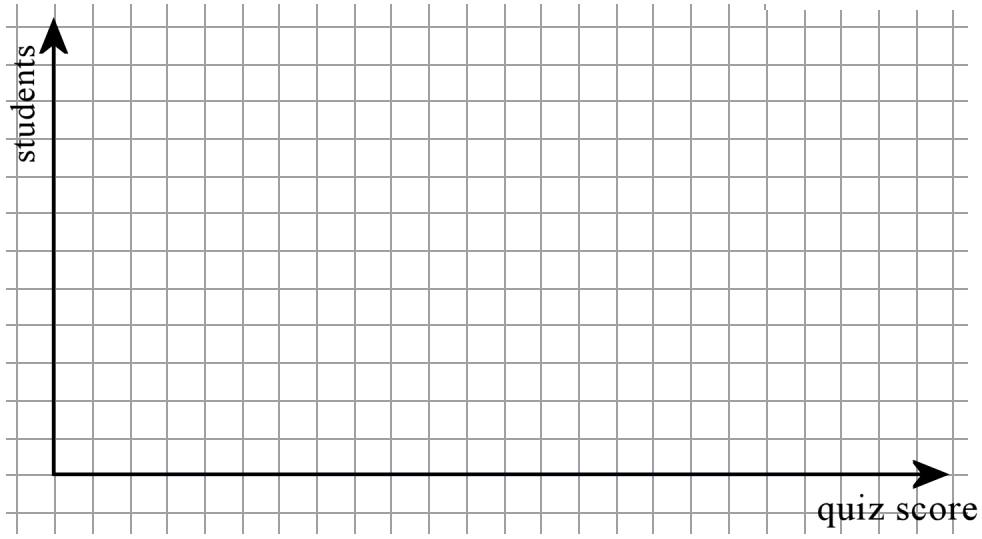
6. **a.** Continue this pattern for four more numbers:

2,000 1,750 1,500 1,250

b. Write a list of six numbers that follows this pattern: Start at 200, and add 300 each time.

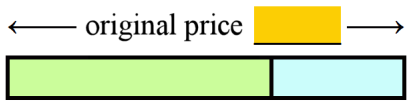
7. These numbers are the students' quiz scores. 2 5 8 7 6 6 7 10 10 4 7 7 8 6 8 5 9 9 8 6 6 5 7 9
Make a frequency table and a bar graph.

Quiz score	Frequency
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



8. Write an addition or a subtraction with an unknown (x or ?). Solve it. The bar model can help.

Rubber boots used to cost $27.95 but now the price is $21.45. How much is the discount?



_____

_____

Large Numbers and Place Value

9. Subtract from whole thousands.

a. 2,000 − 1 = _____	**b.** 5,000 − 20 = _____	**c.** 6,000 − 300 = _____

10. Write the numbers in the normal form.

a. 800 thousand 50

b. 25 thousand 4 hundred 7

11. Find the missing numbers.

a. 30,550 = 50 + _____ + 500	**b.** 809,100 = 800,000 + 100 + _____
c. 725,608 = 20,000 + 700,000 + 8 + _____ + 5,000	

12. Compare, writing $<$, $>$, or $=$ between the numbers.

a. 54,500 55,400	**b.** 108,882 108,828	**c.** 71,600 61,700

13. Write the numbers in order from the smallest to the greatest.
217,200 227,712 27,200 227,200

14. Round the numbers as the dashed line indicates (to the underlined digit).

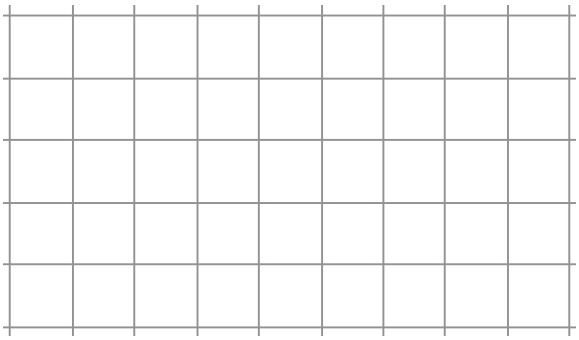
a. 43<u>6</u>,102 ≈ **b.** 89<u>9</u>,756 ≈ **c.** 27,<u>5</u>29 ≈

15. Round to the nearest ten thousand.

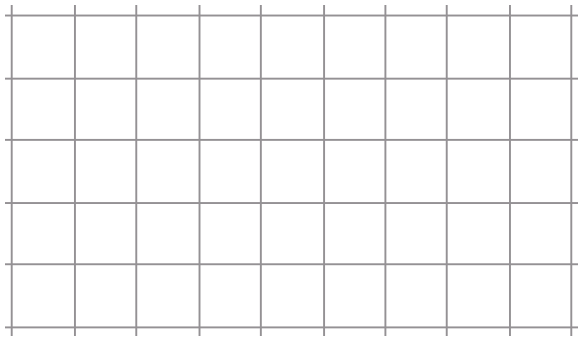
a. 426,889 ≈ **b.** 495,304 ≈ **c.** 7,345 ≈

16. Calculate. Line up all of the place value units carefully.

a. 476,708 + 24,392 + 563



b. 405,112 − 81,424



Multi-Digit Multiplication

17. Multiply, and find the missing factors.

a. 70 × 3 = _____	**b.** 6 × 800 = _____	**c.** 40 × 80 = _____
d. _____ × 3 = 360	**e.** 50 × _____ = 4,000	**f.** _____ × 300 = 21,000

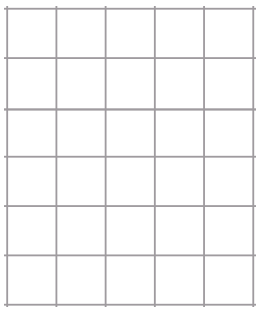
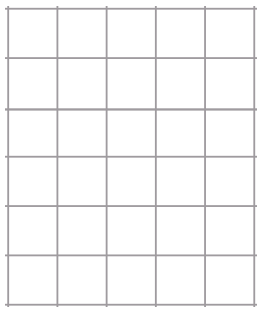
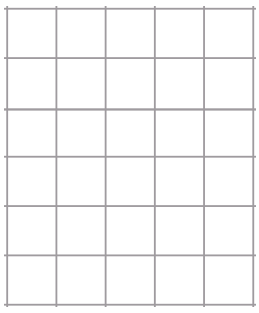
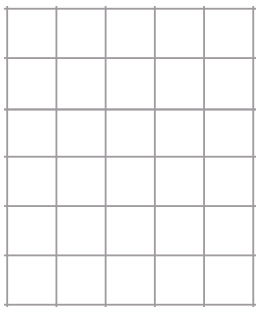
18. Ed earns $20 per hour.

a. How much will he earn in an 8-hour workday? _____

b. How much will he earn in a 40-hour workweek? _____

c. How many days will he need to work in order to earn at least $600? _____

19. Multiply. Estimate the answer on the line.

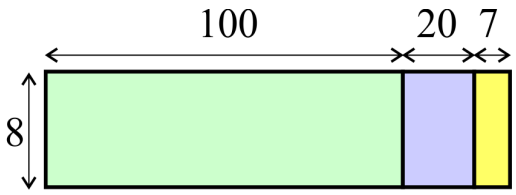
a. 5 × 196	**b.** 35 × 38	**c.** 7 × 3,188	**d.** 89 × 22
≈ _____	≈ _____	≈ _____	≈ _____
			

20. Write the area of the *whole* rectangle as a SUM of the areas of the *smaller* rectangles. Lastly, add to find the total area.

Area = 8 × 127

= ___ × _____ + ___ × ___ + ___ × ___

=



21. Solve the problems. **Write a number sentence** or several for each problem.

a. Find the change, if Sally buys 26 shirts for $14 each, and pays with $400.

_____

_____

Estimate: _____

b. How many minutes are there in a day (24 hours)?

_____

_____

c. One side of a square is 375 cm. What is its perimeter?

_____

_____

d. Bicycles that cost $277 were discounted by $58. A store bought eight. What was the total cost?

_____

_____

Time and Measuring

22. Measure the lines below to the nearest eighth of an inch and also in centimeters and millimeters.

a. _____ in. or _____ cm _____ mm

b. _____ in. or _____ cm _____ mm

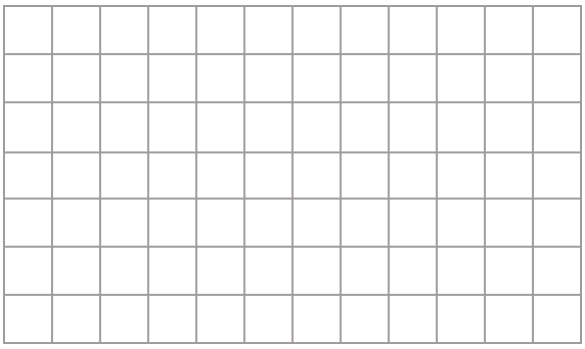
23. How much time passes from 10:54 a.m. till 5:06 p.m.?

24. Luis kept track of how long it took him to do his homework:

Monday	Tuesday	Wednesday	Thursday	Sunday
1 h 45 min	50 min	1 h 15 min	2 h 15 min	55 min

How much time did he spend with homework in total?

_____



25. A teacher started her workday at 7:00 am, and stopped it at 3:35 pm. But in between, she had a 45-minute lunch break, and another break of 20 minutes. How many hours/minutes did she actually work?

26. Convert between the different measuring units.

a.	**b.**	**c.**
6 lb = _____ oz	5 gal = _____ qt	4 ft 2 in. = _____ in.
2 lb 11 oz = _____ oz	2 qt = _____ cups	7 yd = _____ ft

27. Convert between the different measuring units.

a.	b.	c.
2 kg = _____ g	5 L 200 ml = _____ ml	8 cm 2 mm = _____ mm
11 kg 600 g = _____ g	3 m = _____ cm	10 km = _____ m

28. George jogs daily on a track through the woods that is 3 km 800 m long.
What is the total distance he runs in four days?

29. Alice drank 350 ml of a 2-liter bottle of water.
How much is left?

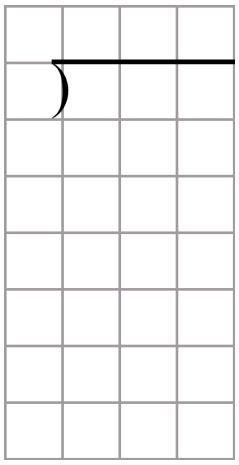
30. The long sides of a rectangle measure 5 ft 6 in,
and the short sides are 3 ft 4 in.

What is the perimeter? _____ ft _____ in

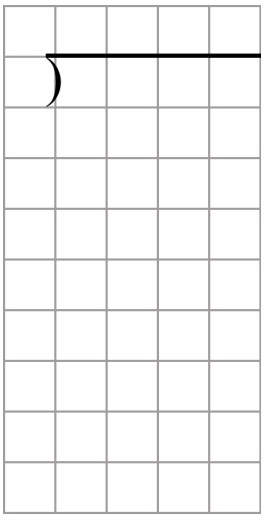
Division and Factors

31. Divide. Check each problem by multiplying.

a. 567 ÷ 9 Check:



b. 8,564 ÷ 4 Check:



32. Solve.

a. 47 ÷ 5 = _____ R ___	**b.** 25 ÷ 3 = _____ R ___	**c.** 57 ÷ 9 = _____ R ___

33. Solve.

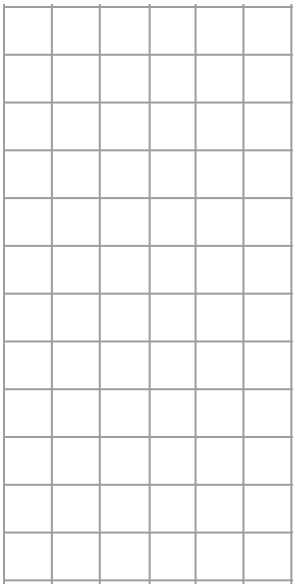
a. Amy put 48 photographs into an online photo album.
On each page she could fit nine photos.
How many photos were on the last page?

How many pages were full?

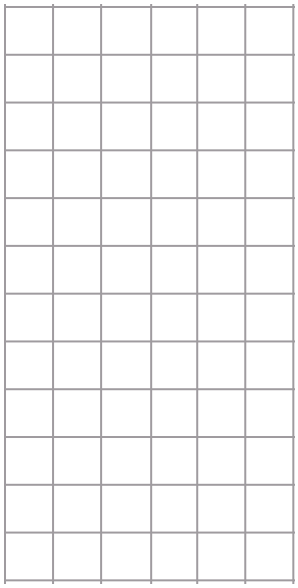
b. You bought a 50-foot roll of chain-link fence that cost $150.
Then you sold 12 feet of it to your neighbor.
How much did your neighbor pay?

34. Solve.

a. Joe had saved $264. He spent 3/8 of that to buy a camera. How much did the camera cost?



b. Mary packed 117 muffins into bags of six.
How many bags does Mary need for them?



35. Mark an X if the number is divisible by the given numbers.

number	divisible by 1	divisible by 2	divisible by 3	divisible by 4	divisible by 5	divisible by 6	divisible by 7	divisible by 8	divisible by 9	divisible by 10
80										
75										
47										

36. Fill in.

a. Is 5 a factor of 60? _____, because ____ × ____ = _____.	**b.** Is 7 a divisor of 43? _____, because ____ ÷ ____ = _____.
c. Is 96 divisible by 4? _____, because _____.	**d.** Is 34 a multiple of 7? _____, because _____.

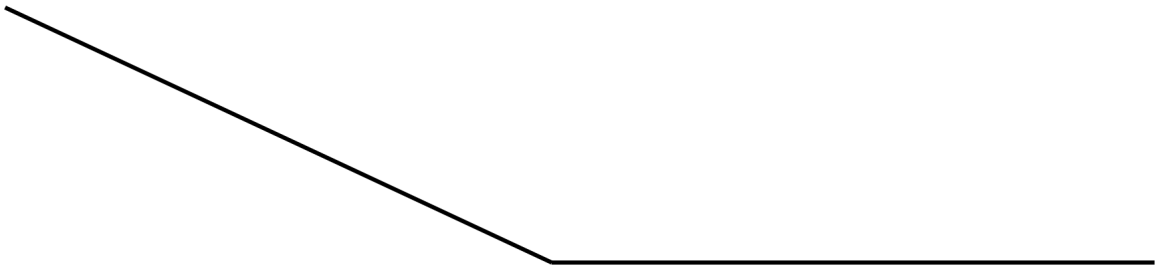
37. List three prime numbers.

38. Find all the factors of the given numbers.

a. 56 factors:	**b.** 78 factors:

Geometry

39. Measure this angle.

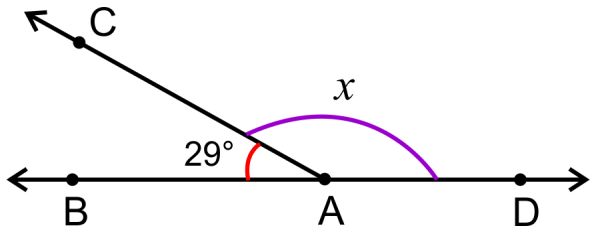


40. Draw here an angle of 65°.

41. Draw here any obtuse triangle,
and measure its angles.

42. Write an addition sentence about
the angle measures. Use an unknown (x)
for one angle measure.

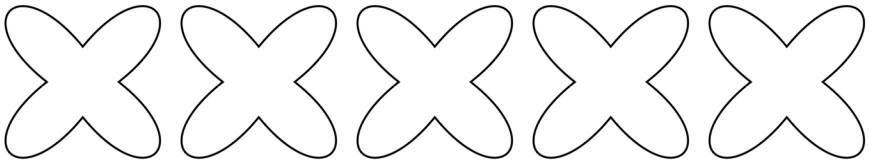
Then solve it.



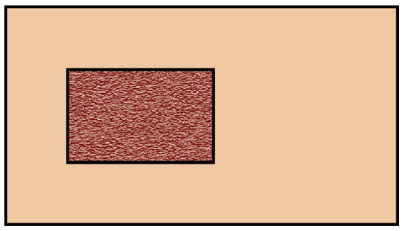
43. Sketch here any rectangle. Then draw a diagonal
line in it (a line from corner to corner).
What kind of triangles are formed?

44. Sketch here two line segments that
are perpendicular to each other.

45. Draw as many different symmetry lines as you can into these shapes.

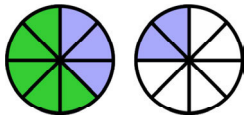


46. This picture shows the floor of a room with a carpet on the floor. The room itself measures 28 feet by 12 feet. The carpet is 6 ft by 10 ft. Find the area of floor outside the carpet (not including the carpet).



Fractions and Decimals

47. Write an addition to match the picture:



48. Erica did 1/4 of a puzzle, and Mom did another fourth of it. How much of the puzzle is still left to do?

49. Add and subtract. Give your final answer as a whole number or as a mixed number if possible.

a. $\frac{4}{5} + \frac{3}{5} =$	**b.** $1\frac{1}{6} - \frac{2}{6} =$	**c.** $3\frac{6}{8} + 2\frac{2}{8} =$

50. Split the existing pieces. Fill in the missing parts.

a. Each piece is split into 2 new ones.

$\frac{4}{5} = \frac{\square}{\square}$

b. Each piece is split into ____ new ones.

$\frac{\square}{\square} = \frac{6}{9}$

51. Write the equivalent fractions.

a. $\frac{2}{3} = \frac{\square}{15}$	**b.** $\frac{3}{5} = \frac{9}{\square}$	**c.** $\frac{1}{6} = \frac{\square}{12}$	**d.** $\frac{1}{3} = \frac{\square}{9}$

52. Compare the fractions.

a. $\frac{2}{3} \square \frac{3}{8}$ **b.** $\frac{6}{5} \square \frac{7}{8}$ **c.** $\frac{11}{12} \square \frac{11}{10}$ **d.** $\frac{1}{3} \square \frac{5}{12}$

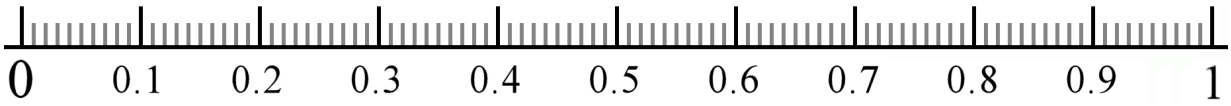
53. Write these fractions in order, from the smallest to the greatest: $\frac{5}{4}, \frac{7}{10}, \frac{65}{100}$

54. A recipe calls for 3/4 cup of flour. If you triple the recipe, how much flour do you need?

55. Fill in.

a. $\frac{3}{8} = 3 \times \frac{\square}{\square}$	**b.** $4 \times \frac{2}{5} =$	**c.** $7 \times \frac{2}{12} =$

56. Mark on the number line the following decimals: 0.55 0.08 0.27 0.80



57. Write the fractions and mixed numbers as decimals.

a. $\frac{3}{10}$	**b.** $3\frac{9}{10}$	**c.** $\frac{9}{100}$	**d.** $7\frac{45}{100}$

58. Write the decimals as fractions or mixed numbers.

a. 0.6	**b.** 6.7	**c.** 0.21	**d.** 5.05

59. Compare.

a. 0.17 ☐ 0.2 **b.** 1.6 ☐ 1.56 **c.** 13.09 ☐ 13.9 **d.** 9.80 ☐ 9.8

60. Add and subtract.

a. 7.81 + 5.2	**b.** 6.1 − 2.36