



End-of-the-Year Test Grade 4 International Version

This test is quite long, so I don't recommend that you have your child/student do it in one sitting. Break it into parts and administer them over several days. Use your judgement.

This test works as a diagnostic test. So, 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 of the major concepts and ideas are tested here. This test is evaluating the student'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 *Math Mammoth Grade 5 Complete Curriculum*, I recommend that the student gain a **minimum score of 80%** on this test, and that the teacher or parent revise with him any content areas in which the student is weak. Students scoring between 70% and 80% may also go on to grade 5, depending on the types of errors (careless errors or not remembering something, versus 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 judgement.

A calculator is not allowed. My suggestion for grading is below. The total is 185 points. A score of 148 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	
<i>subtotal</i>		/ 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	
<i>subtotal</i>		/ 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	
<i>subtotal</i>		/ 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	2 points	
28	1 point	
29	2 points	
<i>subtotal</i>		/ 19
Division and Factors		
30	4 points	
31	3 points	
32	4 points	
33a	3 points	
33b	2 points	
34	6 points	
35	4 points	
36	2 points	
37	4 points	
<i>subtotal</i>		/ 32
Geometry		
38	2 points	
39	2 points	
40	3 points	
41	2 points	
42	2 points	
43	1 point	
44	2 points	
45	3 points	
<i>subtotal</i>		/ 17

Question	Max. points	Student score
Fractions and Decimals		
46	1 point	
47	1 point	
48	3 points	
49	2 points	
50	4 points	
51	4 points	
52	2 points	
53	3 points	
54	4 points	
55	4 points	
56	4 points	
57	4 points	
58	2 points	
<i>subtotal</i>		/ 38
TOTAL		/ 185

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:
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2. a. Round the prices to the nearest dollar. Use the rounded prices to estimate the total cost.

Crackers \$2.25; cheese \$8.90; jam \$4.75; butter \$9.30.

b. Now, use the exact prices (not rounded prices). Mrs. Grayson bought the items listed above and paid with \$50. How much was her change?

3. *Estimate* the cost of buying five notebooks for \$2.85 each and two pencil cases for \$3.25 each.

4. Calculate in the right order.

a. $3 \times (4 + 6) = \underline{\hspace{2cm}}$ $100 - 4 \times 4 = \underline{\hspace{2cm}}$	b. $3 \times 3 + 8 \div 4 = \underline{\hspace{2cm}}$ $(7 - 3) \times 3 + 2 = \underline{\hspace{2cm}}$	c. $20 \times 3 + 80 \div 1 = \underline{\hspace{2cm}}$ $15 + 2 \times (8 - 6) = \underline{\hspace{2cm}}$
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5. Circle the number sentence that fits the problem. Then solve for x .

a. Alicia had \$35. Then she earned some money (x). Now she has \$92. $\$35 + x = \92 OR $\$35 + \$92 = x$ $x = \underline{\hspace{2cm}}$	b. Mike baked cookies and gave 24 of them to a friend and now he has 37 cookies left. $37 - 24 = x$ OR $x - 24 = 37$ $x = \underline{\hspace{2cm}}$
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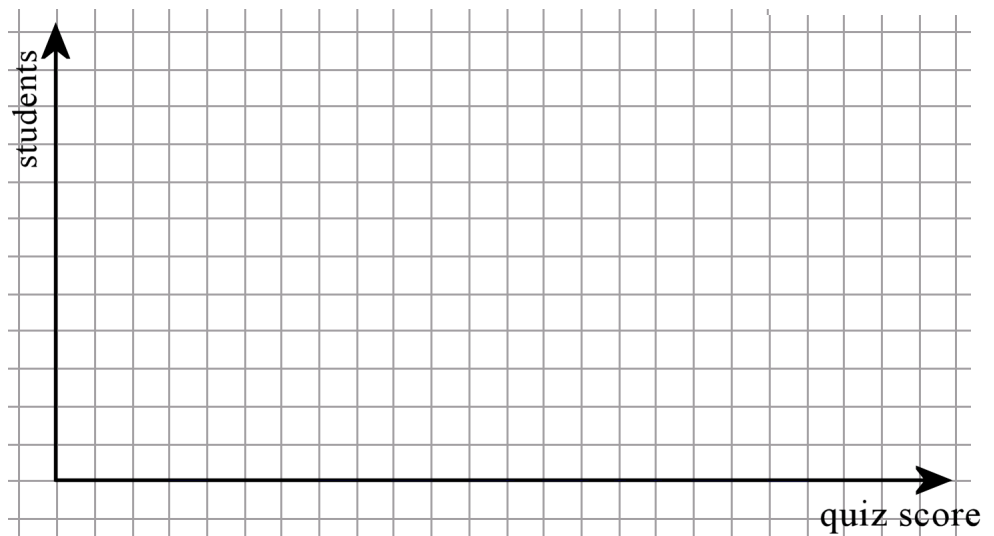
6. **a.** Continue this pattern for four more numbers:

2000 1750 1500 1250

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

7. These are the quiz scores for several students. 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.

<p>A doll used to cost \$27.95 but now the price is \$21.45. How much is the discount?</p> <p>_____</p> <p>_____</p>	<p style="text-align: center;">← original price →</p> <div style="text-align: center;"> </div>
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Large Numbers and Place Value

9. Subtract from whole thousands.

a. $2\ 000 - 1 = \underline{\hspace{2cm}}$	b. $5\ 000 - 20 = \underline{\hspace{2cm}}$	c. $6\ 000 - 300 = \underline{\hspace{2cm}}$
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10. Write the numbers in normal form.

- a.** 800 thousand 50
- b.** 25 thousand 4 hundred 7

11. Find the missing numbers.

a. $30\ 550 = 50 + \underline{\hspace{2cm}} + 500$	b. $809\ 100 = 800\ 000 + 100 + \underline{\hspace{2cm}}$
c. $725\ 608 = 20\ 000 + 700\ 000 + 8 + \underline{\hspace{2cm}} + 5\ 000$	

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

a. 54 500 55 400	b. 108 882 108 828	c. 71 600 61 700
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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. 4 <u>3</u> :6 102 \approx	b. 8 <u>9</u> :756 \approx	c. 27 <u>5</u> :29 \approx
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15. Round to the nearest ten thousand.

a. 426 889 \approx	b. 495 304 \approx	c. 7 345 \approx
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16. Calculate. Line up all the digits carefully.

a. $476\,708 + 24\,392 + 563$

b. $405\,112 - 81\,424$

Multi-Digit Multiplication

17. Multiply, and find the missing factors.

a. $70 \times 3 = \underline{\hspace{2cm}}$	b. $6 \times 800 = \underline{\hspace{2cm}}$	c. $40 \times 80 = \underline{\hspace{2cm}}$
d. $\underline{\hspace{2cm}} \times 3 = 360$	e. $50 \times \underline{\hspace{2cm}} = 4\,000$	f. $\underline{\hspace{2cm}} \times 300 = 21\,000$

18. Tom 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.

<p>a. 5×196</p> <p>\approx _____</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																															<p>b. 35×38</p> <p>\approx _____</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																															<p>c. $7 \times 3\,188$</p> <p>\approx _____</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																															<p>d. 89×22</p> <p>\approx _____</p> <table border="1"><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																														

26. 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

27. 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?

28. Bonnie drank 350 ml of a 2-litre bottle of water.
How much is left?

29. The long sides of a rectangle measure 5 m 20 cm,
and the short sides are 3 m 4 cm.

What is the perimeter? _____ m _____ cm

Division and Factors

30. Divide. Check each problem by multiplying.

<p>a. $567 \div 9$ Check:</p> <div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 0; left: 0; font-size: 2em;">)</div> </div>	<p>b. $8564 \div 4$ Check:</p> <div style="border: 1px solid black; width: 100%; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 0; left: 0; font-size: 2em;">)</div> </div>
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31. Solve.

a. $47 \div 5 = \underline{\hspace{1cm}} \text{ R } \underline{\hspace{1cm}}$	b. $25 \div 3 = \underline{\hspace{1cm}} \text{ R } \underline{\hspace{1cm}}$	c. $57 \div 9 = \underline{\hspace{1cm}} \text{ R } \underline{\hspace{1cm}}$
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32. Solve.

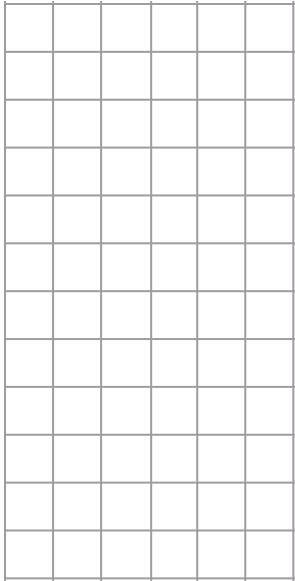
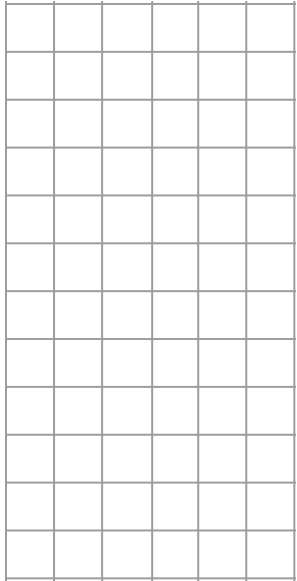
a. Amanda put 48 photographs into an online photo album. On each page she could fit nine photos.

How many photographs were on the last page?

How many pages were full?

b. If you buy a 15-metre roll of chain-link fence that costs \$255, and then you sell 3 metres of it to your neighbour, how much should your neighbour pay?

33. Solve.

<p>a. Mitch had saved \$264. He spent $\frac{3}{8}$ of it to buy a book. How much did the book cost?</p> 	<p>b. Mary packed 117 muffins into bags of six. How many bags does Mary need for them?</p> 
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34. Mark with 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										

35. Fill in.

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

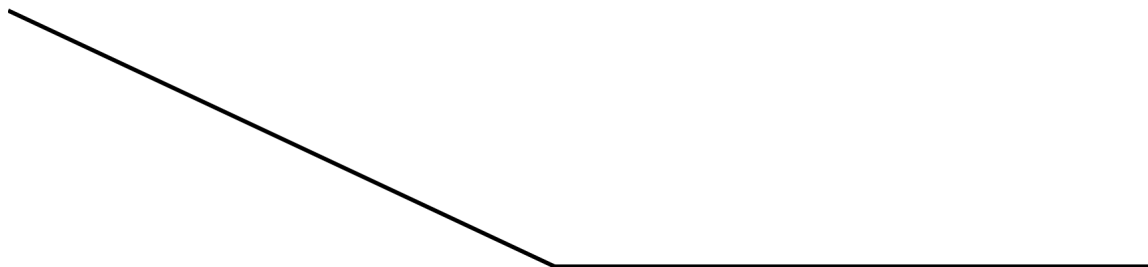
36. List three prime numbers.

37. Find all the factors of the given numbers.

<p>a. 56</p> <p>factors:</p>	<p>b. 78</p> <p>factors:</p>
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Geometry

38. Measure this angle.

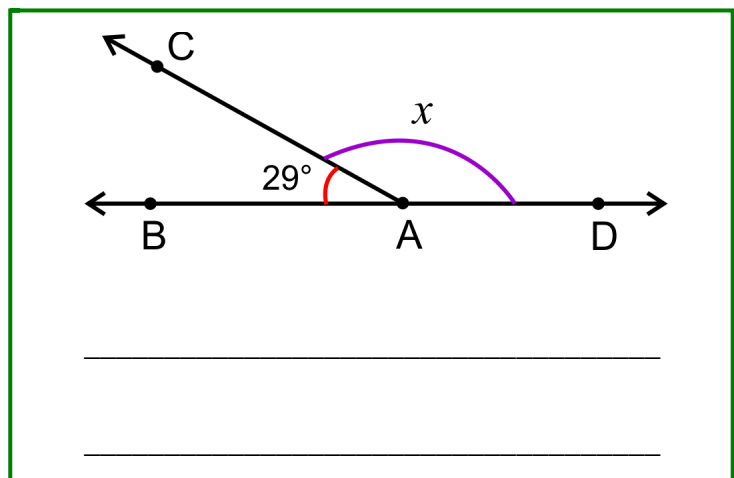


39. Draw below an angle of 65° .

40. Draw below any obtuse triangle, and measure its angles.

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

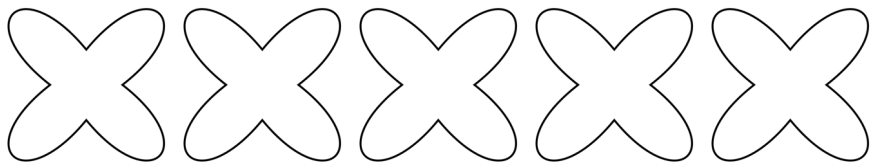
Then solve it.



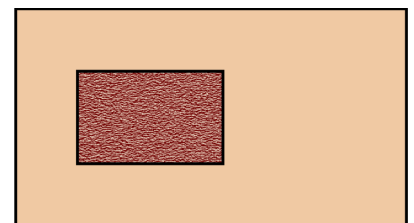
42. Sketch here any rectangle. Then draw one diagonal line in it (a line from corner to corner).
What kind of triangles are formed?

43. Draw two line segments that are perpendicular to each other.

44. Draw as many different symmetry lines as you can into this shape.

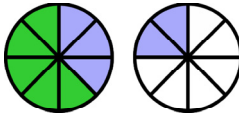


45. This picture shows the floor of a room with a carpet on the floor. The room itself measures 9 metres by 4 metres. The carpet is 2 metres by 3 metres. Find the area of floor outside the carpet (not including the carpet).



Fractions and Decimals

46. Write an addition to match the picture:



47. Emma did $\frac{1}{4}$ of a puzzle, and Mum did another fourth of it. How much of the puzzle is still left to do?

48. 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. $3\frac{6}{8} + 2\frac{2}{8} =$
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49. Split the existing pieces. Fill in the missing parts.

<div style="border: 1px solid green; padding: 5px; margin-bottom: 10px;"> </div> <p style="text-align: center;">a. Each piece is split into 2 new ones.</p> $\frac{4}{5} = \frac{\text{yellow square}}{\text{yellow square}}$	<div style="border: 1px solid green; padding: 5px; margin-bottom: 10px;"> </div> <p style="text-align: center;">b. Each piece is split into ____ new ones.</p> $\frac{\text{yellow square}}{\text{yellow square}} = \frac{6}{9}$
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50. Write the equivalent fractions.

a. $\frac{2}{3} = \frac{\text{yellow square}}{15}$	b. $\frac{3}{5} = \frac{9}{\text{yellow square}}$	c. $\frac{1}{6} = \frac{\text{yellow square}}{12}$	d. $\frac{1}{3} = \frac{\text{yellow square}}{9}$
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51. Compare the fractions.

a. $\frac{2}{3} \square \frac{3}{8}$

b. $\frac{6}{5} \square \frac{7}{8}$

c. $\frac{11}{12} \square \frac{11}{10}$

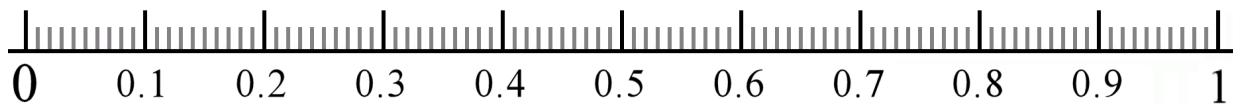
d. $\frac{1}{3} \square \frac{5}{12}$

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

53. Fill in.

a. $\frac{3}{8} = 3 \times \frac{\quad}{\quad}$	b. $4 \times \frac{2}{5} =$	c. $7 \times \frac{2}{12} =$
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54. Mark on the number line the following decimals: 0.55 0.08 0.27 0.80



55. Write the fractions and mixed numbers as decimals.

a. $\frac{3}{10}$	b. $3\frac{9}{10}$	c. $\frac{9}{100}$	d. $7\frac{45}{100}$
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56. Write the decimals as fractions or mixed numbers.

a. 0.6	b. 6.7	c. 0.21	d. 5.05
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57. Compare.

a. $0.17 \square 0.2$
 b. $1.6 \square 1.56$
 c. $13.09 \square 13.9$
 d. $9.80 \square 9.8$

58. Add and subtract.

<p style="text-align: center;">a. $7.81 + 5.2$</p> <div style="text-align: center;"> <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div>																															<p style="text-align: center;">b. $6.1 - 2.36$</p> <div style="text-align: center;"> <table border="1" style="width: 100%; height: 100px; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div>																														