## Math Mammoth Grade 4 End-of-Year Test Answer Key

1. 1,980. Add to check: 1,980 $+543+2,677$ equals 5,200 .
2. a. $\approx \$ 1+\$ 9+\$ 4+\$ 9=\$ 23$
b. Her bill is $\$ 1.28+\$ 8.92+\$ 3.77+\$ 9.34=\$ 23.31$. Her change is $\$ 30-\$ 23.31=\$ 6.69$.
3. Estimate: $5 \times \$ 0.90+2 \times \$ 1.20=\$ 4.50+\$ 2.40=\$ 6.90$
4. a. 30; 84
b. 11; 14
c. $140 ; 19$
5. a. $\$ 35+x=\$ 92 ; x=\$ 57$
b. $x-24=37$; $x=61$
6. a. $2,000 \quad 1,750 \quad 1,500 \quad 1,250 \quad 1,000 \quad 750 \quad 500 \quad 250$
b. $200,500,800,1100,1400,1700$
7. In the frequency table we list how many students got that score.

| Quiz score | Frequency |
| :---: | :---: |
| 1 | 0 |
| 2 | 1 |
| 3 | 0 |
| 4 | 1 |
| 5 | 3 |
| 6 | 5 |
| 7 | 5 |
| 8 | 4 |
| 9 | 3 |
| 10 | 2 |


8.

Rubber boots used to cost $\$ 27.95$ but now the price is $\$ 21.45$. How much is the discount?
$\$ 21.45+x=\$ 27.95 \quad$ OR $\quad x=\$ 27.95-\$ 21.45$
 $x=\$ 6.50$
9. a. 1,999
b. 4,980
c. 5,700
10. a. 800,050
b. 25,407
11. a. 30,000
b. 9,000
c. 600
12. a. $<$
b. >
c. $>$
13. 27,200 217,200 227,200 227,712
14. a. 440,000
b. 90,000
c. 27,500
15. a. 430,000
b. 500,000
c. 10,000
16. a. 501,663
b. 323,688
17. a. 210
b. 4,800
c. 3,200
d. 120
e. 80
f. 70
18. a. \$160
b. $\$ 800$
c. four days, since $4 \times \$ 160=\$ 640$
19. a. estimate $5 \times 200=1,000$. Exact: 980
b. estimate $40 \times 40=1,600$ or $30 \times 40=1,200$. Exact: 1,330
c. estimate $7 \times 3,000=21,000$. Exact: 22,316
d. estimate $90 \times 20=1,800$. Exact: 1,958
20.

$$
\begin{aligned}
& \text { Area }=8 \times 127 \\
& =\underline{8} \times \underline{100}+\underline{8} \times \underline{20}+\underline{8} \times \underline{7} \\
& =800+160+56=1,016
\end{aligned}
$$


21. a. Answers may vary. For example: $\$ 400-26 \times \$ 14=\$ 400-\$ 364=\$ 36$. Or, $26 \times \$ 14=\$ 364$ and $\$ 400-\$ 364=\$ 36$.
b. $24 \times 60$ minutes $=1,440$ minutes
c. Answers may vary. For example: $4 \times 375 \mathrm{~cm}=1,500 \mathrm{~cm}$. Or, $375 \mathrm{~cm}+375 \mathrm{~cm}+375 \mathrm{~cm}+375 \mathrm{~cm}=1,500 \mathrm{~cm}$
d. Answers may vary. For example: $(\$ 277-\$ 58) \times 8=\$ 1,752$. Or, $\$ 277-\$ 58=\$ 219$ and $8 \times \$ 219=\$ 1,752$.
22. Answers may vary if the test is printed with "shrink to fit" or "fit to printable area", or because of slight variability in rulers, or because of measuring inaccurately. Please check students' answers.
a. $51 / 4 \mathrm{in}$. or 13 cm 3 mm .13 cm 4 mm is also acceptable. b. $37 / 8 \mathrm{in}$. or 9 cm 8 mm .9 cm 9 mm is also acceptable.
23. 6 hours 12 minutes
24. $1 \mathrm{~h} 45 \mathrm{~min}+50 \mathrm{~min}+1 \mathrm{~h} 15 \mathrm{~min}+2 \mathrm{~h} 15 \mathrm{~min}+55 \mathrm{~min}=4 \mathrm{~h} 180 \mathrm{~min}$, which is 7 hours.
25. She worked 7 hours 30 minutes. From 7:00 am till $3: 35$ pm is 8 hours 35 minutes. Subtract from that 65 minutes, or 1 hour 5 minutes, to get 7 hours 30 minutes.
26.

| a. | b. | c. |
| :--- | :--- | :--- |
| $6 \mathrm{lb}=96 \mathrm{oz}$ | $5 \mathrm{gal}=20 \mathrm{qt}$ | $4 \mathrm{ft} 2 \mathrm{in} .=50 \mathrm{in}$. |
| $2 \mathrm{lb} 11 \mathrm{oz}=43 \mathrm{oz}$ | $2 \mathrm{qt}=8 \mathrm{cups}$ | $7 \mathrm{yd}=21 \mathrm{ft}$ |

27. 

| a. | b. | c. |
| :---: | :--- | :--- |
| $2 \mathrm{~kg}=2,000 \mathrm{~g}$ | $5 \mathrm{~L} 200 \mathrm{ml}=5,200 \mathrm{ml}$ |  |
| $11 \mathrm{~kg} 600 \mathrm{~g}=11,600 \mathrm{~g}$ | $3 \mathrm{~m}=300 \mathrm{~cm}$ | $8 \mathrm{~cm} 2 \mathrm{~mm}=82 \mathrm{~mm}$ |
| $10 \mathrm{~km}=10,000 \mathrm{~m}$ |  |  |

28. In four days, he jogs 15 km 200 m .
29. 1 L 650 ml
30. 17 ft 8 in
31. a. 63 . Check: $63 \times 9=567$ b. 2,141. Check: $2141 \times 4=8,564$
32. a. 9 R2 b. 8 R1 c. 6 R3
33. a. Three photos on the last page; five pages were full.
b. Your neighbor should pay \$36, because one foot of the fence costs $\$ 3$.
34. a. It cost $\$ 99$. First find $1 / 8$ of $\$ 264$ : $\$ 264 \div 8=\$ 33$. Then to find $3 / 8$ of it, multiply $3 \times \$ 33=\$ 99$.
b. She needs 20 bags. $117 \div 6=19$ R3. Notice she needs a bag also for the three muffins that don't fill a bag.
35. 

| number | divisible <br> by 1 | divisible <br> by 2 | divisible <br> by 3 | divisible <br> by 4 | divisible <br> by 5 | divisible <br> by 6 | divisible <br> by 7 | divisible <br> by 8 | divisible <br> by 9 | divisible <br> by 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 80 | x | x |  | x | x |  |  | x |  | x |
| 75 | x |  | x |  | x |  |  |  |  |  |
| 47 | x |  |  |  |  |  |  |  |  |  |

36. 

| a. Is 5 a factor of 60? | b. Is 7 a divisor of 43? |
| :---: | :---: |
| $\underline{\text { Yes, }}$, because $\underline{5} \times \underline{12}=\underline{60}$ |  |
| c. Is 96 divisible by 4? | d. Is 34 a multiple of 7? |
|  | No, because 34 is not in the multiplication table of 7 . |
| Yes, because $96 \div 4=24$ (the division is even). | OR: No, because $34 \div 7=4$ R6; the division is not even. OR: No, because there is no whole number you can multiply by 7 to get 34 . |

37. Answers vary. For example: 2, 3, and 5. Here is a list of primes less than 100:

2357111317192329313741434753596167717379838997
38. a. $1,2,4,7,8,14,28,56 \quad$ b. $1,2,3,6,13,26,39,78$
39. $155^{\circ}$
40. Check students' answers.

41. Answers vary. Check students' answers. The sum of the angle measures should be $180^{\circ}$ or very close.
42. $29^{\circ}+x=180^{\circ} ; \quad x=151^{\circ}$.
43. Right triangles.

44. Answers vary. Check students' answers. For example:

45.

46. Use subtraction. $\mathrm{A}=28 \mathrm{ft} \times 12 \mathrm{ft}-6 \mathrm{ft} \times 10 \mathrm{ft}=336 \mathrm{ft}^{2}-60 \mathrm{ft}^{2}=276 \mathrm{ft}^{2}$.
47. $\frac{5}{8}+\frac{5}{8}=1 \frac{2}{8}$
48. There are still $2 / 4$ or $1 / 2$ of it left to do.
49. a. 1 2/5
b. $5 / 6$
c. 6
50.

51.
a. $\frac{2}{3}=\frac{10}{15}$
b. $\frac{3}{5}=\frac{9}{15}$
c. $\frac{1}{6}=\frac{2}{12}$
d. $\frac{1}{3}=\frac{3}{9}$
52. a. $>\quad$ b. $>\quad$ c. $<\quad$ d. $<$
53. $\frac{65}{100}<\frac{7}{10}<\frac{5}{4}$
54. 2 1/4 cups
55. a. 1/8
b. $13 / 5$
c. $12 / 12$
56.

57. a. $0.3 \quad$ b. $3.9 \quad$ c. $0.09 \quad$ d. 7.45
58. a. $6 / 10$
b. 6 7/10
$\begin{array}{ll}\text { c. } 21 / 100 & \text { d. } 55 / 100\end{array}$
59. a. <
b. >
c. $<$
d. $=$
60. a. 13.01
b. 3.74

