

# Math Mammoth End-of-the-Year Test, Grade 5, Answer Key

Please see the file for the End of the Year Test for grading instructions.

## The Four Operations

- a. 45    b. 409,344
- a.  $x = 296,430$     b.  $Y = 80$     c.  $N = 3,304$
- All of these are correct:  
 $4Y = 600$  or  $4 \times Y = 600$  or  $Y + Y + Y + Y = 600$  or  $600 \div 4 = Y$  or  $600 \div Y = 4$  or  $600 - Y - Y - Y - Y = 0$ .  
Solution:  $Y = 150$ .
- a.  $42 \times 10 = (10 - 4) \times 70$     b.  $143 = 13 \times (5 + 6)$
- $(\$19.95 - \$5) \times 5$  or  $5 \times (\$19.95 - \$5)$ . The total cost was \$74.75.
- No, it is not. Explanations vary. For example: It is an odd number, and therefore cannot be divisible by an even number.  
 $991 \div 4 = 247 \text{ R}3$ , leaving a remainder, so 991 is not divisible by 4.
- a.  $26 = 2 \times 13$     b.  $40 = 2 \times 2 \times 2 \times 5$     c. 59 is prime

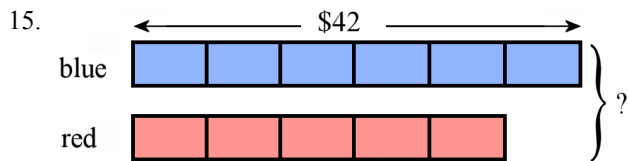
## Large Numbers

- a. 70,016,090    b. 32,000,232,000
- It is about  $32,000 \times 300 = 9,600,000$ . Other estimates are also possible.
- 80 million or 80,000,000
- 11.

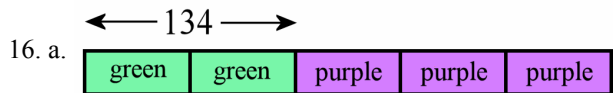
|                        |           |            |
|------------------------|-----------|------------|
| <i>number</i>          | 593,204   | 19,054,947 |
| to the nearest 1,000   | 593,000   | 19,055,000 |
| to the nearest 10,000  | 590,000   | 19,050,000 |
| to the nearest 100,000 | 600,000   | 19,100,000 |
| to the nearest million | 1,000,000 | 19,000,000 |

## Problem Solving

- An 8-ft long board is 96 inches. One-sixth of that is  $96 \text{ in.} \div 6 = 16 \text{ in.}$  The remaining piece is 80 inches, or 6 ft 8 in.
- It would cost \$7.80 to download ten songs. First, find the price of one song download:  $\$4.68 \div 6 = \$0.78$ . Then, multiply that by 10.
- A lunch in the cheap restaurant costs  $\frac{1}{3}$  of \$36, or \$12. Mary spends  $\$36 + 4 \times \$12 = \$84$ .



One block in the model is  $\$42 \div 6 = \$7$ . The red swimsuit costs  $5 \times \$7 = \$35$ . Together they cost  $\$77$ .



b. One block or part in the model is  $134 \div 2 = 67$  marbles. There are therefore  $3 \times 67 = 201$  purple marbles.

17. a. The DVD costs about  $\$30$ . Karen pays  $\frac{3}{5}$  of it, which is about  $\$30 \div 5 \times 3 = \$18$ . Ann pays about  $\$12$ .

b. Karen pays  $\$29.90 \div 5 \times 3 = \$17.94$ . Ann pays  $\$11.96$ .

## Decimals

18. a. 0.289    b. 0.30    c. 0.305    d. 0.313

19. a. 0.95    b. 0.72    c. 0.62    d. 1.26    e. 1.05    f. 0.37

20. a. 0.08    b. 0.081    c. 5.21

21. a.  $\frac{48}{1000}$     b.  $1 \frac{4}{1000}$     c.  $7 \frac{22}{100}$

22. a.  $0.31 > 0.031$     b.  $0.43 > 0.093$     c.  $1.6 > 1.29$

23.

| rounded to... | nearest one | nearest tenth | nearest hundredth |
|---------------|-------------|---------------|-------------------|
| 5.098         | 5           | 5.1           | 5.10              |

| rounded to... | nearest one | nearest tenth | nearest hundredth |
|---------------|-------------|---------------|-------------------|
| 0.306         | 0           | 0.3           | 0.31              |

24.

|                            |                            |                            |
|----------------------------|----------------------------|----------------------------|
| a. $0.4 \times 7 = 2.8$    | d. $10 \times 0.05 = 0.5$  | g. $1.1 \times 0.3 = 0.33$ |
| b. $0.4 \times 0.7 = 0.28$ | e. $100 \times 0.05 = 5$   | h. $70 \times 0.9 = 63$    |
| c. $0.4 \times 700 = 280$  | f. $1000 \times 0.5 = 500$ | i. $20 \times 0.09 = 0.18$ |

25.

|                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| a. $0.36 \div 6 = 0.06$ | c. $3 \div 100 = 0.03$  | e. $16 \div 10 = 1.6$   |
| b. $5.6 \div 7 = 0.8$   | d. $0.7 \div 10 = 0.07$ | f. $71 \div 100 = 0.71$ |

26.

|  |  |   |
|--|--|---|
| a. $0.2 \text{ m} = 20 \text{ cm}$<br>$37 \text{ cm} = 0.37 \text{ m}$<br>$2.9 \text{ km} = 2,900 \text{ m}$ | b. $0.4 \text{ L} = 400 \text{ ml}$<br>$3.5 \text{ kg} = 3,500 \text{ g}$<br>$240 \text{ g} = 0.24 \text{ kg}$ | c. $56 \text{ oz} = 3 \text{ lb } 8 \text{ oz}$<br>$74 \text{ in.} = 6 \text{ ft } 2 \text{ in.}$<br>$15 \text{ C} = 3 \text{ qt } 3 \text{ C}$ |
|--|--|---|

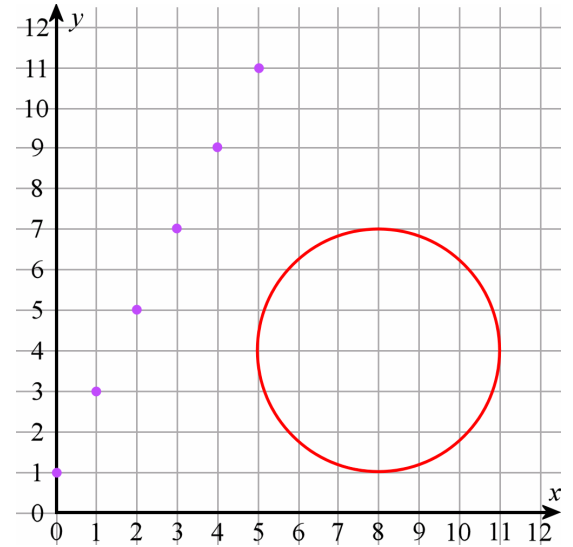
27. There are 444 milliliters in two bowls. Two liters is 2,000 ml.  $2,000 \text{ ml} \div 9 = 222.2 \text{ ml}$  or about 222 ml.

28. a. 1.42    b. 14.28    b. 14.08

## Graphs

29.

|     |   |   |   |   |   |    |
|-----|---|---|---|---|---|----|
| $x$ | 0 | 1 | 2 | 3 | 4 | 5  |
| $y$ | 1 | 3 | 5 | 7 | 9 | 11 |

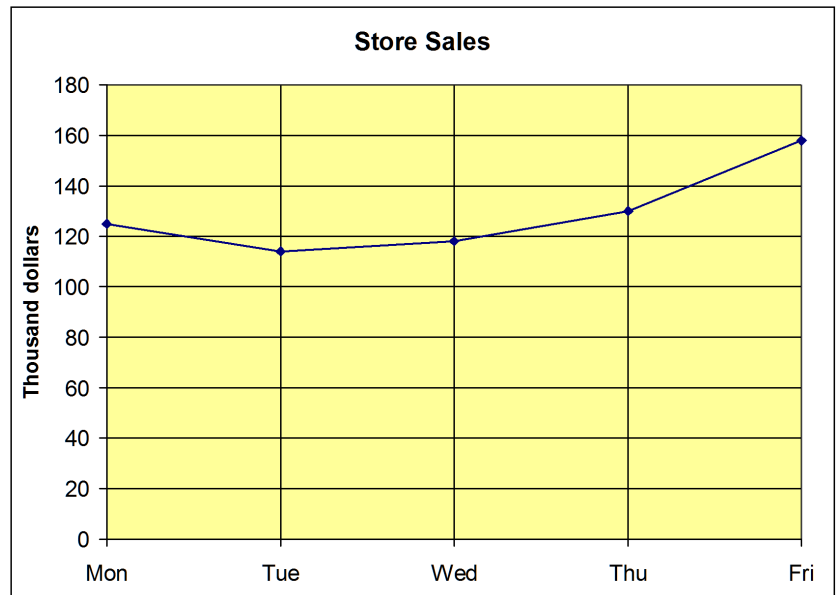


30. See the image on the right.

31.

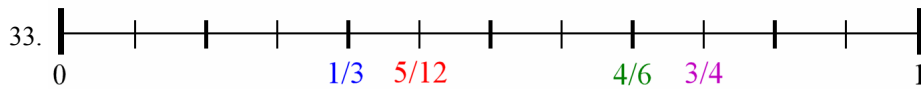
| Day | Sales<br>(1000 dollars) |
|-----|-------------------------|
| Mon | 125                     |
| Tue | 114                     |
| Wed | 118                     |
| Thu | 130                     |
| Fri | 158                     |

- See the line graph on the right.
- The average daily sales is \$129,000.



# Fractions

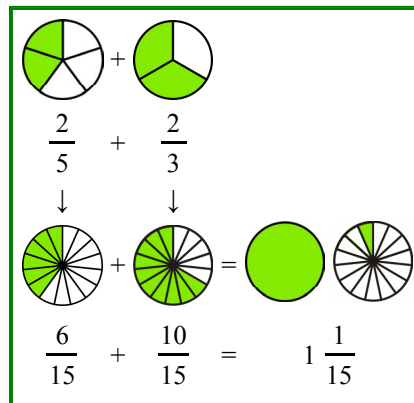
32. a.  $6 \frac{1}{3}$  b.  $2 \frac{1}{3}$  c.  $13 \frac{4}{5}$



34. 

|   |                                 |                                  |                                 |
|---|---------------------------------|----------------------------------|---------------------------------|
| <del>a. <math>\frac{5}{6} = \frac{\quad}{20}</math></del> | b. $\frac{2}{7} = \frac{8}{28}$ | c. $\frac{3}{8} = \frac{15}{40}$ | d. $\frac{2}{9} = \frac{6}{27}$ |
|---|---------------------------------|----------------------------------|---------------------------------|

35. Mia finds the common denominator (15) correctly, but forgets that the 2 fifths and the 2 thirds do not stay as 2 fifteenths in the conversion.



36. a.  $1 \frac{1}{6}$  b.  $\frac{7}{15}$  c.  $5 \frac{5}{8}$  d.  $10 \frac{5}{18}$

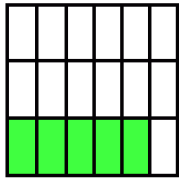
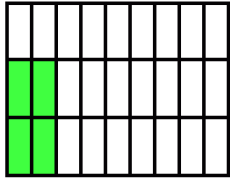
37. You would need  $3 \times (2 \frac{3}{4}) = 8 \frac{1}{4}$  cups of flour to make three batches of rolls.

38. a.  $\frac{6}{9} > \frac{6}{13}$  b.  $\frac{6}{13} < \frac{1}{2}$  c.  $\frac{5}{10} > \frac{48}{100}$  d.  $\frac{1}{4} = \frac{25}{100}$  e.  $\frac{5}{7} > \frac{7}{10}$

39. a.  $1 \frac{2}{5}$  b. cannot be simplified c.  $\frac{7}{8}$

40. Yes, it is correct.  $(\frac{2}{3}) \times (\frac{1}{2}) = \frac{1}{3}$ .

41.

|  |  |
|--|--|
|  <p>a. <math>\frac{1}{3} \times \frac{5}{6} = \frac{5}{18}</math></p> |  <p>b. <math>\frac{2}{9} \times \frac{2}{3} = \frac{4}{27}</math></p> |
|--|--|

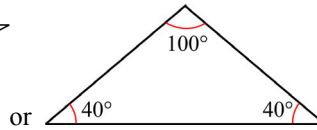
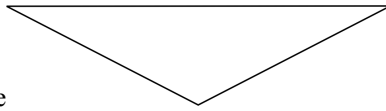
42. You can cut 60 pieces.  $15 \text{ in.} \div (\frac{1}{4} \text{ in.}) = 60$

43.  $\frac{1}{6}$  of the pizza.  $(\frac{1}{2}) \div 3 = \frac{1}{6}$

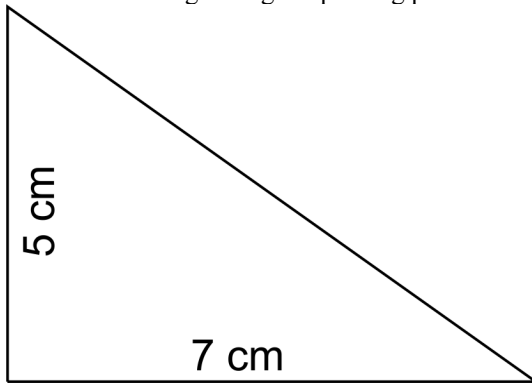
44. a.  $10 \frac{1}{2}$  b.  $\frac{1}{21}$  c.  $2 \frac{14}{15}$  d. 18

## Geometry

45. The sides measure  $2\frac{15}{16}$  in.,  $2\frac{9}{16}$  in., and  $4\frac{15}{16}$  in. The perimeter is  $10\frac{7}{16}$  in.
46. a. an isosceles acute triangle    b. a rhombus    c. a right scalene triangle    d. a trapezoid
47. a.  $9\text{ m}^2$     b. 20 ft
48. Yes, it is. A square has one pair of parallel sides, which is a definition of a trapezoid.



49. Yes, it can. For example
50. a. Check the triangles that the student drew. The student should use a tool, such as a triangular ruler or a protractor, to make the right angle. The picture below may be slightly out of scale when printed, due to the possible variation in scaling during the printing process.



- b.  $8.6\text{ cm} + 5\text{ cm} + 7\text{ cm} = 20.6\text{ cm}$
- c. They measure  $90^\circ$ ,  $36^\circ$ , and  $54^\circ$ .
51. The volume is  $5\text{ cm} \times 10\text{ cm} \times 4\text{ cm} = 200\text{ cm}^3$ .
52. a.  $1.2\text{ m} \times 0.6\text{ m} \times 1\text{ m} = 0.72\text{ m}^3$ .
- b. 240 liters.  $0.72\text{ m}^3$  is 720 liters, and one-third of that is 240 liters.