Date Time

Math Boxes 2

1. Rename each fraction as an equivalent fraction.

a. $\frac{1}{4}$ _____

b. $\frac{1}{2}$ _____

c. $\frac{1}{10}$ _____

d. $\frac{6}{8}$ _____

e. $\frac{4}{5}$ _____

25

2. Write the value of the digit 9 in each numeral below.
Example: 79,804 The value of the 9 is 9 thousands.

a. 401,297 _____

b. 1,927,387 _____

c. 95,063,843 _____

d. 6,948,331,567 _____

5

3. Complete.

a. 1500/5 = _____

b. 600 * _____ = 54,000

c. _____ = 80 * 90

d. 8100/_____ = 9

e. _____/90 = 50

11 13

4. Complete.

a. 3 yd = _____ in

b. 6 ft = _____ in

c. _____ ft = 24 in

d. $3\frac{1}{2}$ ft = _____ in

e. _____ yd = 9 ft

f. 108 in = _____ ft

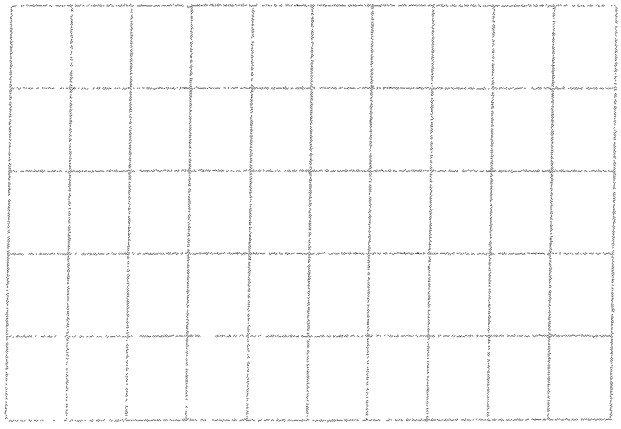
339

5. Add.

a.
$$\begin{array}{r} 2653 \\ +\ 4819 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 43{,}708 \\ +\ 6{,}493 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 27 \\ 109 \\ 75 \\ +\ 2636 \\ \hline \end{array}$$



9

Date Time

Math Boxes 3

1. Write each fraction in simplest form.

a. $\frac{3}{12}$ = _____

b. $\frac{5}{10}$ = _____

c. $\frac{6}{8}$ = _____

d. $\frac{8}{12}$ = _____

e. $\frac{3}{9}$ = _____

26

2. Write five names for $\frac{7}{8}$.

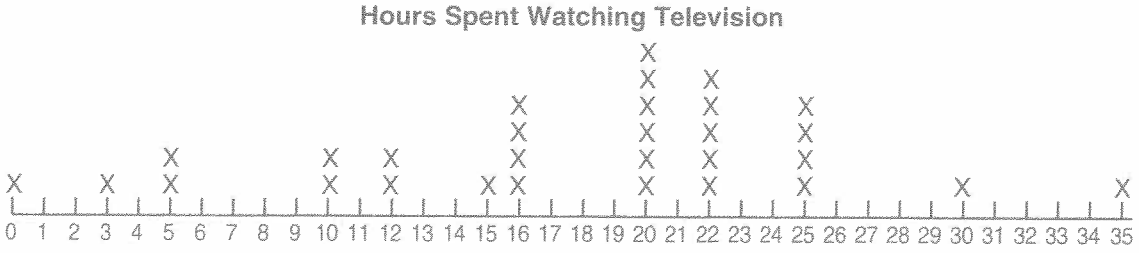
Rule: Each name must include the fraction $\frac{1}{2}$.

7/8

3. Mark and label the following numbers on the number line.

a. $\frac{1}{4}$ **b.** $1\frac{1}{9}$ **c.** $\frac{12}{4}$ **d.** $2\frac{3}{4}$ **e.** $\frac{1}{2}$

4. Thirty students recorded the number of hours they spent watching television during one week. The line plot shows their data.



Find the following landmarks.

a. maximum: _____ **b.** minimum: _____ **c.** range: _____

d. median: _____ **e.** mode: _____

169

Date Time

Math Boxes 4

1. Add.

a. $\frac{1}{4}$ cup + $\frac{1}{4}$ cup = _____ cup

b. $\frac{1}{8}$ cup + $\frac{1}{4}$ cup = _____ cup

c. $\frac{1}{2}$ cup + $\frac{1}{4}$ cup = _____ cup

d. $\frac{3}{4}$ cup + $\frac{1}{2}$ cup = _____ cups

32

2. Complete.

a. 32 oz = _____ lb

b. $4\frac{1}{2}$ lb = _____ oz

c. 80 oz = _____ lb

d. $2\frac{3}{4}$ lb = _____ oz

339

3. Draw a line segment $2\frac{1}{2}$ inches long. Make dots on the line segment at the following distances from one end: $\frac{1}{8}$ inch, $\frac{9}{16}$ inch, $1\frac{5}{8}$ inches, and $2\frac{5}{16}$ inches. Label each dot.

4. Find the median and mean of each set of numbers below.

a. 7, 2, 12, 5, 9, 18

median: _____

mean: _____

b. 21, 47, 34, 96, 71

median: _____

mean: _____

168 169

5. Mr. Hogan's class collected newspapers for a science project. If each of 29 students brought 15 newspapers, how many newspapers did the class collect?

_____

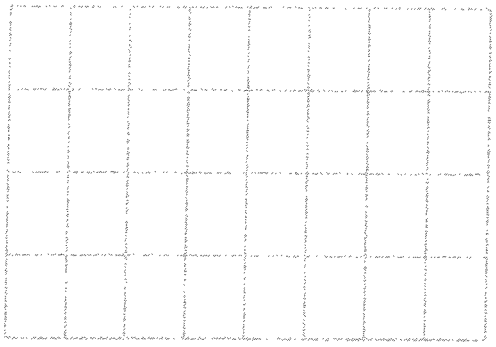
12

6. Subtract.

a. 900 − 3

b. 5182 − 2637

c. 8035 − 675



10

Date Time

Math Boxes 5

1. Write 5 fractions equivalent to $\frac{3}{5}$.

a. _____

b. _____

c. _____

d. _____

e. _____

2. Write the value of the digit 3 in each numeral below.

a. 456,396 _____

b. 3,598,902 _____

c. 40,378,922

_____

d. 932,721,400 _____

e. 790,473,225 _____

3. Complete.

a. 28,000/70 = _____

b. 400 = 80 * _____

c. _____ = 49,000/700

d. _____ = 2100/3

e. 560,000 = 700 * _____

4. Complete.

a. 42 in = _____ ft

b. $3\frac{1}{4}$ ft = _____ in

c. _____ in = $4\frac{3}{4}$ yd

d. $2\frac{1}{2}$ ft = _____ in

e. _____ yd = 32 ft

5. Add.

a. 4209 + 6385 = _____

b. 472 + 38,529 = _____

c. 4 + 263 + 1020 + 79 = _____

Date Time

Math Boxes 6

1. Write each fraction in its simplest form.

a. $\frac{9}{12}$ = _____

b. $\frac{2}{8}$ = _____

c. $\frac{10}{15}$ = _____

d. $\frac{15}{18}$ = _____

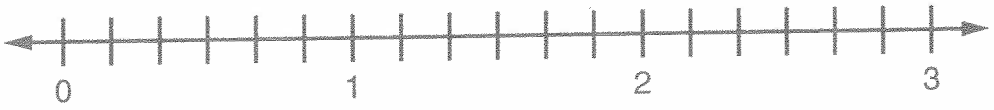
e. $\frac{15}{24}$ = _____

2. Write five names for 1.
Rule: Use fractions only.
Use any operations.

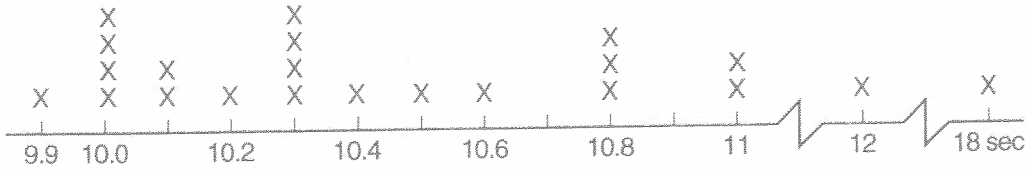
1

3. Mark and label each of the following numbers on the number line below.

a. $\frac{1}{3}$ **b.** $1\frac{2}{3}$ **c.** $\frac{5}{6}$ **d.** $2\frac{1}{6}$ **e.** $\frac{6}{3}$



4. The line plot below shows the first-place times in the men's 100-meter run at the Olympic Games from 1896 to 1992. Times are rounded to tenths of a second.



Source: *World Almanac and Book of Facts 1996.*

Find the following landmarks (to tenths of a second) for the data set.

a. maximum: _____ **b.** minimum: _____ **c.** range: _____

d. median: _____ **e.** mode(s): _____

Date Time

Math Boxes 7

1. Add.

a. $\frac{3}{4} + \frac{3}{4} =$ _____

b. $\frac{4}{9} + \frac{2}{3} =$ _____

c. $\frac{3}{8} + \frac{1}{2} =$ _____

d. $\frac{2}{5} + \frac{9}{10} =$ _____

2. Complete.

a. 8 oz = _____ lb

b. $1\frac{1}{2}$ lb = _____ oz

c. 56 oz = _____ lb

d. $3\frac{1}{4}$ lb = _____ oz

3. Draw a line segment that is $1\frac{3}{4}$ inches long. Mark and label dots on the line segment at the following distances from one end: $\frac{3}{4}$ inch, $1\frac{3}{16}$ inches, $1\frac{4}{8}$ inches, $\frac{5}{16}$ inch.

4. Find the median and mean of each set of numbers.

a. 13, 29, 18, 34, 21

median: _____

mean: _____

b. 42, 16, 51, 41

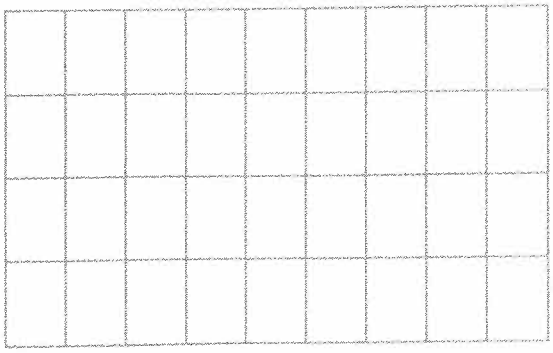
median: _____

mean: _____

5. In some 60-minute television programs, there are about 9 minutes of commercials. At that rate, about how many minutes of commercials would there be in

24 hours? _____

one week? _____



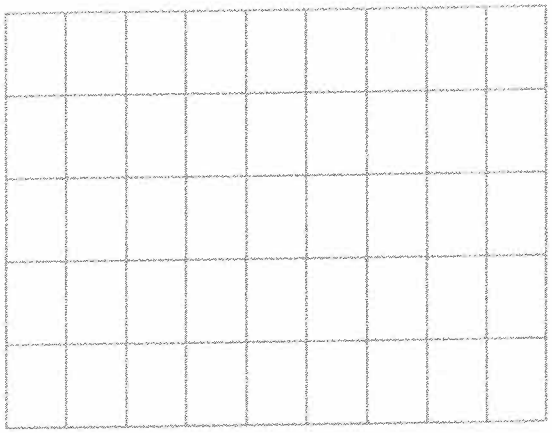
Source: *The Wall Street Journal.*

6. Subtract.

a. 1000 − 25 = _____

b. 2037 − 294 = _____

c. 7214 − 6218 = _____



Date Time

Math Boxes 8

1. Rename each fraction as a mixed number or a whole number.

a. $\frac{5}{4}$ = _____

b. $\frac{5}{3}$ = _____

c. $\frac{11}{6}$ = _____

d. $\frac{5}{5}$ = _____

e. $\frac{14}{4}$ = _____

24

2. Multiply.

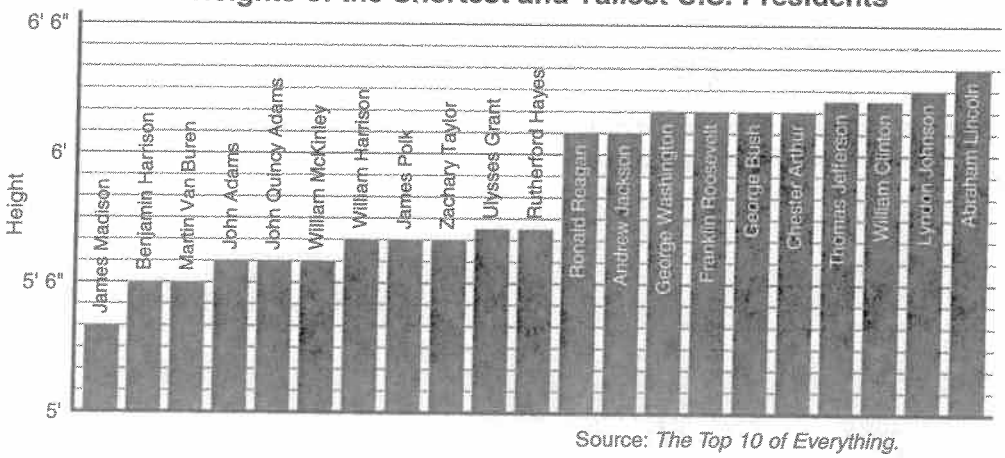
a. 81 * 13 = _____

b. 43 * 72 = _____

12

3. Use the following bar graph to answer the questions below.

171



Source: *The Top 10 of Everything.*

a. How tall was George Washington? _____

b. How tall was Zachary Taylor? _____

c. Who was the shortest president? _____

d. Who was the tallest president? _____

e. What was the difference in height between the tallest and shortest presidents? _____

f. Which height occurs most often for the presidents listed? _____

g. What was the difference in height between Ulysses Grant and Chester Arthur? _____

Date Time

Math Boxes 9

1. Rename each fraction as a decimal.

a. $\frac{1}{2}$ = _____

b. $\frac{3}{4}$ = _____

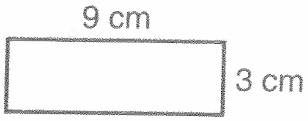
c. $\frac{2}{5}$ = _____

d. $\frac{7}{10}$ = _____

e. $\frac{8}{25}$ = _____

44

2. Find the perimeter and area of this rectangle.



perimeter = _____ cm

area = _____ cm²

116 119

3. Complete the "What's My Rule?" table.

Rule
out = in * 7

in	out
30	
	42
17	
	105

150

4. Draw a parallelogram that has all sides the same length.

This type of parallelogram is also called a _____.

74

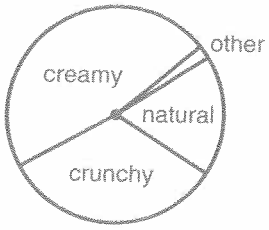
5. According to the circle graph at the right:

a. Which kind of peanut butter do most Americans prefer? _____

b. Which kind is preferred by about $\frac{1}{3}$ of Americans? _____

c. About what percent of Americans prefer natural peanut butter? _____

Peanut Butter Survey



Source: *Astounding Averages.*

147

Date Time

Math Boxes 10

1. Rename each fraction as a mixed number or a whole number.

a. $\frac{3}{2}$ = _____

b. $\frac{7}{6}$ = _____

c. $\frac{11}{8}$ = _____

d. $\frac{6}{6}$ = _____

e. $\frac{10}{4}$ = _____

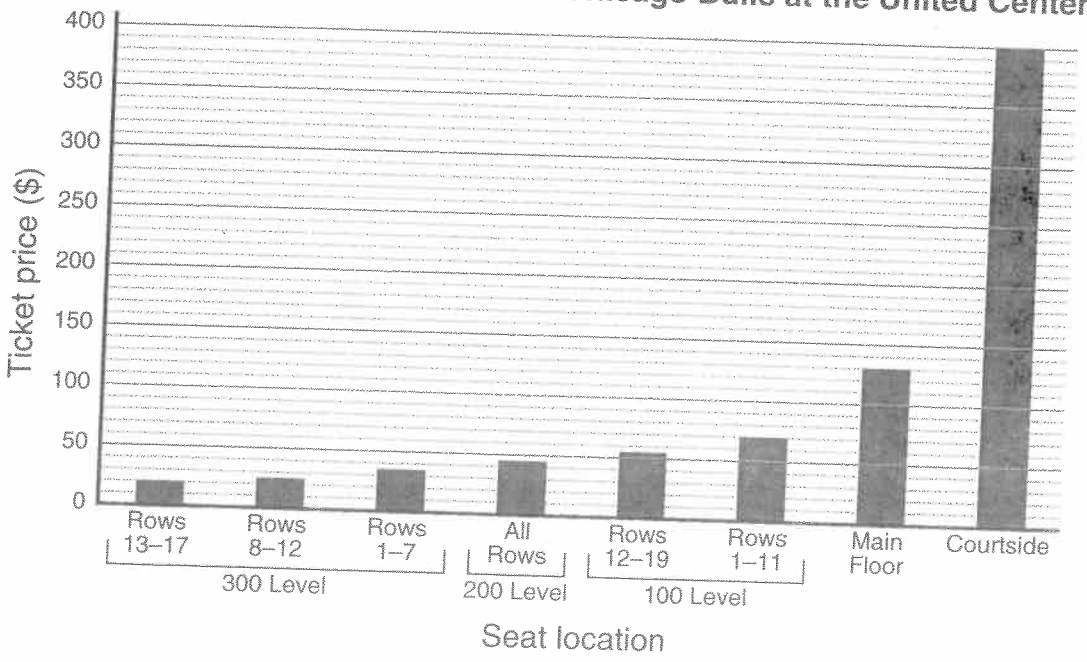
2. Multiply.

a. 57 * 34 = _____

b. 308 * 78 = _____

3. Use the following bar graph to answer the questions below.

1997–98 Cost of Seats to Watch the Chicago Bulls at the United Center



a. How much do the cheapest seats at the United Center cost? _____

b. What is the range of prices for seats? _____

c. What is the difference in price between a courtside seat and a seat at the 200 level? _____

d. What is the median price of a 300-level seat? _____

e. Mr. Harris wants to buy four 100-level seats. How much would he save if he bought the cheaper 100-level seats rather than the more expensive 100-level seats? _____

Use with Lesson 10.

Date Time

Math Boxes 11

1. Rename each fraction as a decimal.

a. $\frac{1}{4}$ = _____

b. $\frac{3}{5}$ = _____

c. $\frac{9}{10}$ = _____

d. $\frac{7}{20}$ = _____

e. $\frac{21}{25}$ = _____

2. A rectangle has a perimeter of 30 centimeters and an area of 50 square centimeters. What might its length and width be?

length = _____ cm

width = _____ cm

3. Complete the "What's My Rule?" table below.

Rule
out = in −(25)

in	out
45	
	0
	25
15	

4. Use your Geometry Template to draw a regular hexagon. Then divide this figure into 6 congruent triangles.

What kind of triangles are these?

_____

5. Use these circle graphs to answer the following questions.

Percent of Water in Foods

bread pineapple ripe tomato

Source: *Astounding Averages.*

a. Which food contains the greatest percent of water? _____

b. About what percent of the content of bread is water? _____

c. About what percent of the content of a ripe tomato is water? _____

Date Time

Math Boxes 13

1. Rename each fraction as an equivalent fraction.

a. $\frac{1}{8} = $ _____

b. $\frac{3}{7} = $ _____

c. $\frac{8}{12} = $ _____

d. $\frac{4}{6} = $ _____

25

2. Write each fraction in simplest form.

a. $\frac{4}{10}$ _____

b. $\frac{6}{9}$ _____

c. $\frac{10}{12}$ _____

d. $\frac{18}{24}$ _____

e. $\frac{14}{18}$ _____

26

3. Add or subtract. Simplify the answer, if possible.

a. $\frac{1}{8} + \frac{3}{16} = $ _____

b. $\frac{3}{4} - \frac{3}{8} = $ _____

c. $\frac{5}{8} + \frac{1}{2} = $ _____

d. $\frac{2}{3} - \frac{1}{6} = $ _____

32

4. Rename each fraction as a mixed number or a whole number.

a. $\frac{8}{5} = $ _____

b. $\frac{16}{2} = $ _____

c. $\frac{14}{9} = $ _____

d. $\frac{7}{6} = $ _____

e. $\frac{8}{8} = $ _____

24

5. Rename each fraction as a decimal.

a. $\frac{4}{25} = $ _____

b. $\frac{6}{10} = $ _____

c. $\frac{4}{5} = $ _____

d. $\frac{17}{20} = $ _____

e. $\frac{3}{50} = $ _____

44 45

6. Molly filled a measuring cup with milk to the $\frac{3}{4}$-cup mark. Now she wants to add $\frac{1}{2}$ cup of buttermilk to the cup. To what mark should she pour the buttermilk?

_____

32

Date Time

Math Boxes 14

1. Write each number in standard notation.

a. $7^2 =$ _____

b. $5^3 =$ _____

c. $2^5 =$ _____

d. $3^4 =$ _____

e. $10^6 =$ _____

6

2. Complete.

11 13

a. $4 * 7{,}000{,}000 =$ _____

b. $\frac{56{,}000}{10} =$ _____

c. $50 * 60{,}000{,}000 =$ _____

d. 6000 miles is what fraction of 24,000 miles? _____

3. Write equivalent names.

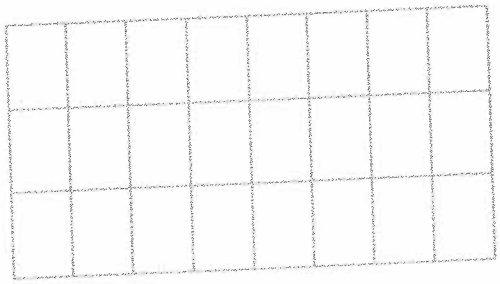
	Fraction	Decimal	Percent
a.	$\frac{2}{5}$	_____	_____
b.	_____	_____	85%
c.	_____	1.75	_____
d.	$\frac{2}{8}$	_____	_____

44 47

4. Multiply.

a. $34 * 67 =$ _____

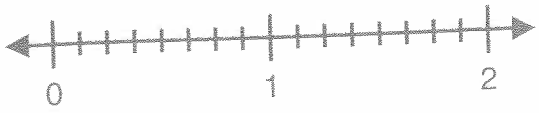
b. $29 * 51 =$ _____



12

5. Mark and label each fraction on the number line.

a. $\frac{1}{4}$ **b.** $1\frac{1}{8}$ **c.** $1\frac{3}{8}$ **d.** $\frac{3}{2}$



6. Tell whether each angle is an acute, right, obtuse, reflex, or straight angle.

a. 120° angle: _____

b. 300° angle: _____

c. 90° angle: _____

d. 180° angle: _____

72

Date Time

Math Boxes 15

1. **a.** How would you read 32,000,000? Circle the correct answer.

thirty-two thousand thirty-two million thirty-two billion thirty-two trillion

b. Write *fifty trillion* using digits only. _____

5

2. Estimate each product by rounding the larger factor to the nearest million. The first one has been done for you.

130

a. 4 * 3,110,000 is about *12,000,000*

b. 4,906,854 * 20 is about _____

c. 980,421 * 9 is about _____

d. 34,509,113 * 5 is about _____

3. Compare. Write < or >.

a. $\frac{4}{9}$ _____ $\frac{3}{5}$

b. $\frac{3}{4}$ _____ $\frac{5}{8}$

c. $\frac{6}{7}$ _____ $\frac{4}{5}$

d. $\frac{1}{9}$ _____ $\frac{1}{10}$

29

4. Solve each open sentence.

a. $32 + n = 56$
Solution: _____

b. $y - 13 = 20$
Solution: _____

c. $48 = 4 * d$
Solution: _____

d. $(2 * m) + 5 = 17$
Solution: _____

157 158

5. List all the factors of each number.

a. 30 _____

b. 24 _____

c. 19 _____

d. 56 _____

16

6. Add or subtract.

a. $\frac{1}{3} + \frac{4}{3} =$ _____

b. $\frac{1}{2} + \frac{1}{3} =$ _____

c. $\frac{1}{3} - \frac{1}{8} =$ _____

d. $\frac{6}{5} - \frac{1}{3} =$ _____

32

Date Time

Math Boxes 16

1. With a compass, draw a circle with a radius of 1.5 centimeters and another circle with a diameter of 4.0 centimeters. Calculate the circumference of each circle. Round to the nearest tenth of a centimeter. Use the π key on your calculator, or use 3.14 as the value for π.

Circle 1 $C =$ _____

Circle 2 $C =$ _____

117 118

2. The U.S. Postal Service claims that from December 1 to December 24, Americans mail an average of 78 million holiday cards per day. (Remember, there are about 250 million people in the U.S.) About how many holiday cards does the average American send during this period? _____

Does this statistic seem reasonable? _____

132

3. Frank saved $93 for his birthday celebration. He wants to take some friends to a ball game. If tickets cost $8 apiece, how many tickets can he buy?

_____

133

4. **a.** How many hours are there in 1 week? _____

b. How many days are there in 13 weeks? _____

c. How many days are there in 4 years? _____

d. How many months are there in 5 years? _____

5. Add or subtract. Write the answer as a mixed number in simplest form.

a. $3\frac{1}{4} + 1\frac{1}{4} =$ _____

b. $5\frac{2}{3} + \frac{2}{4} =$ _____

c. $2\frac{3}{4} - \frac{1}{4} =$ _____

33 34 35

6. Circle the prime numbers in the list below.

7 15 23 39 68 92

18

Date Time

Math Boxes 17

1. Write each number in standard notation.

a. $6^2 =$ _____

b. $4^4 =$ _____

c. $10^5 =$ _____

d. $3^3 =$ _____

e. $1^8 =$ _____

2. Complete.

a. 40,000,000 =

800 * _____

b. _____/900 = 4000

c. 18,000/20 = _____

d. 30,000 miles is what fraction of 2,700,000 miles?

_____

3. Write equivalent names.

	Fraction	Decimal	Percent
a.	$\frac{1}{4}$	_____	_____
b.	_____	_____	40%
c.	_____	2.5	_____
d.	$\frac{7}{20}$	_____	_____

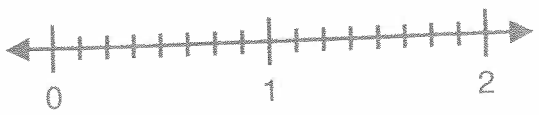
4. Multiply.

a. 46 * 19 = _____

b. 32 * 707 = _____

5. Mark and label each fraction on the number line.

a. $\frac{5}{10}$ **b.** $\frac{7}{4}$ **c.** $\frac{7}{8}$ **d.** $\frac{15}{16}$



6. Tell whether each angle is an acute, right, obtuse, reflex, or straight angle.

a. 270° angle: _____

b. 10° angle: _____

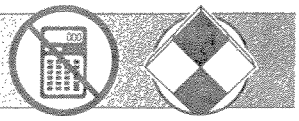
c. 130° angle: _____

d. $40\frac{1}{2}°$ angle: _____

Use with Lesson 17.

Date Time

Math Boxes 18



1. Write the number four billion, five hundred three million, fifty-six thousand, eight with digits.

_____

2. Estimate each product by rounding the larger factor to the nearest hundred thousand.

a. $8 * 146{,}904$ _____

b. $3{,}560{,}103 * 2$ _____

c. $985{,}643 * 5$ _____

d. $99{,}960{,}365 * 3$

_____

3. Compare. Write < or >.

a. $\frac{7}{3}$ _____ $\frac{3}{7}$

b. $\frac{5}{6}$ _____ $\frac{5}{7}$

c. $\frac{2}{3}$ _____ $\frac{4}{9}$

d. $\frac{5}{8}$ _____ $\frac{6}{13}$

4. Solve each open sentence.

a. $12/x = 2$
Solution: _____

b. $d/12 = 2$
Solution: _____

c. $3 - (3 * b) = 0$
Solution: _____

d. $5 * (8 - n) = 15$
Solution: _____

5. List all the factors of each number.

a. 12 _____

b. 25 _____

c. 36 _____

d. 29 _____

6. Add or subtract.

a. $\frac{1}{4} + \frac{3}{4} =$ _____

b. $\frac{5}{6} + \frac{2}{3} =$ _____

c. $1 - \frac{3}{7} =$ _____

d. $\frac{8}{5} - \frac{7}{10} =$ _____

Date Time

Math Boxes 19

1. Draw a circle whose diameter is 5.0 cm. Calculate the radius and circumference to the nearest 0.1 cm.

r = _____ cm C = _____ cm

2. In the U.S., people generate about 1,100,000,000 pounds of garbage per day. (Remember, there are about 250 million people in the U.S.) About how many pounds of garbage does an average American generate each day?

_____

Does this statistic seem reasonable? _____

Explain. _____

_____

3. A group of 193 sixth graders are entered in a 3-on-3 basketball tournament. How many complete teams of 3 players can be formed?

_____

What would you do about any "leftover" students?

_____

_____

_____

4. Estimate.

a. About how many months have you been alive? _____

b. About how many weeks have you been alive? _____

c. About how many days have you been alive? _____

5. Add or subtract. Write the answer as a mixed number in simplest form.

a. $2\frac{1}{6} + 4\frac{3}{6} =$ _____

b. $4\frac{5}{6} - 2\frac{2}{6} =$ _____

c. $2\frac{1}{5} - \frac{3}{5} =$ _____

6. Tell whether the following numbers are prime or composite.

a. The number of ounces in 1 cup. _____

b. The number of teaspoons in 1 tablespoon. _____

c. The number of square feet in 1 square yard. _____

Date Time

Math Boxes 20

1. The circumference of a light pole is about 25 inches.

a. What is its diameter?

about _____ in

b. What is its radius?

about _____ in

117

2. Write the number three hundred forty-five million, two hundred six thousand, seventy-one with digits.

_____

5

3. Estimate the product by rounding the larger factor to the nearest million.

130 11

a. 32,704,381 * 6 =

_____

b. 7 * 4,098,128 =

_____

c. 9,510,484 * 8 =

_____

d. 15,361,002 * 10 =

_____

4. Write each number in standard notation.

a. 5^4 = _____

b. 2^6 = _____

c. 10^7 = _____

d. 4^3 = _____

e. 6^5 = _____

6

5. Complete.

a. 32,000/8 = _____

b. 700,000 * 80 =

_____

c. _____/60 = 800,000

d. 900,000 * 400 =

_____

11 13

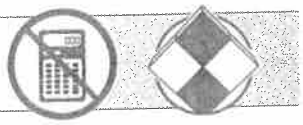
6. Write the number that has 4 in the billions place, 6 in the ones place, 1 in the millions place, 7 in the ten-thousands place, 2 in the hundred-thousands place, and 0 in all the other places smaller than the billions place.

___, ___ ___ ___, ___ ___ ___, ___ ___ ___

5

Date Time

Math Boxes 22



1. The time of day varies from time zone to time zone. The time difference between Newark, New Jersey, and Seattle, Washington, is given by the formula $N - S = 3$, where N stands for the time in Newark and S for the time in Seattle.

a. If S = 8 P.M., N = _____

b. If N = 8 P.M., S = _____

c. If S = 11 A.M., N = _____

156

2. Write each of the following numbers using digits.

a. five and fifty-five hundredths

_____

b. one hundred eight thousandths

_____

c. two hundred six and nine hundredths

_____

41 42

3. Write a number sentence for each word sentence. Then tell whether the number sentence is true or false.

Word Sentence	Number Sentence	True or False?
If 19 is subtracted from 55, the result is 36.		
78 added to 62 is less than 160.		
45 is 5 times as much as 9.		

157

4. Sonia bought $3\frac{5}{8}$ yards of fabric to make a dress. The pattern for the dress calls for only $2\frac{1}{3}$ yards of fabric. How much fabric will be left to make something else?

_____

34

5. Add or subtract.

a. 23.6 + 5.4 = _____

b. _____ = 108.63 − 96.17

c. 0.439 + 0.04 = _____

d. \$7 − \$3.14 = _____

48

Date Time

Math Boxes 24

1. Plot and label the following points on the coordinate grid.

A: (4,5)

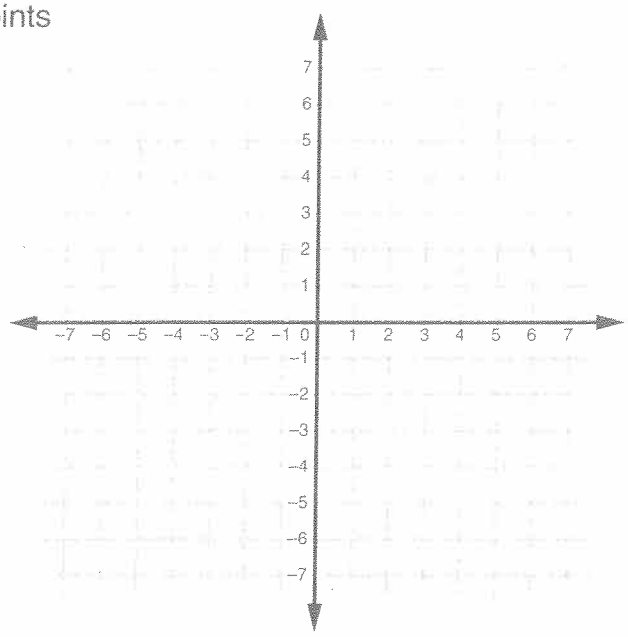
B: (−3,6)

C: (2,−2)

D: (0,4)

E: (−6,−3)

F: (1,0)



87

2. Complete.

a. 2.5 cm = _____ mm

b. 1500 mm = _____ cm

c. 1500 mm = _____ m

d. _____ m = 650 cm

108 109 110

3. Write in standard notation.

a. 2^4 = _____

b. 3^3 = _____

c. _____ = 8^2

d. 10^5 = _____

6

4. Add. Write your answers as fractions, whole numbers, or mixed numbers in simplest form.

a. _____ = $\frac{2}{3} + \frac{4}{5}$

b. $1\frac{1}{2} + 3\frac{5}{6}$ = _____

c. $2\frac{4}{7} + 6\frac{3}{7}$ = _____

33

5. Multiply.

a. 3.2 * 1.4 = _____

b. _____ = 0.15 * 8

c. 0.54 * 0.2 = _____

d. 5.05 * 0.4 = _____

52

Date Time

Math Boxes 25

1. The relationship between Ann's and Burt's weekly allowance is expressed by the formula $A = 2 * B$, where A stands for Ann's allowance and B for Burt's allowance.

a. If $B = \$5$, $A =$ _____

b. If $A = \$5$, $B =$ _____

c. If $B = \$4.50$, $A =$ _____

2. Write each of the following numbers using digits.

a. five and seven thousandths _____

b. two hundred and forty-nine hundredths _____

c. fifteen and eighteen ten-thousandths _____

3. Write a number sentence for each word sentence. Then tell whether the number sentence is true or false.

Word Sentence	Number Sentence	True or False?
Five times eight is equal to 45.		
15 is greater than 2 less than 10.		
If 72 is divided by the square of 3, the result is 8.		

4. Martin is building two picture frames.

He used $4\frac{1}{2}$ feet of lumber for one frame and $2\frac{3}{4}$ feet for the other frame.

How many feet of lumber did he use in all?

_____

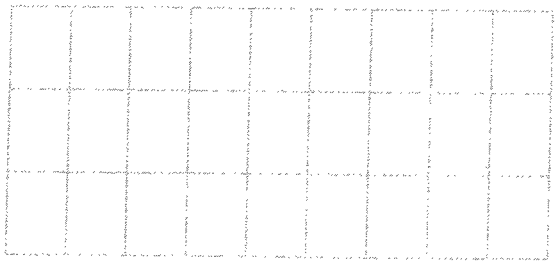
5. Add or subtract.

a. $19.03 + 17.46 =$ _____

b. $941.5 - 72.9 =$ _____

c. _____ $= 0.5 - 0.05$

d. $\$12 - \$4.65 =$ _____



Date Time

Math Boxes 26

1. Doris swam 22 times from one end of the pool to the other. This is a total distance of 440 yards.

a. What is the length of the pool? _____

b. How many lengths must she swim to cover a distance of 100 yards? _____

c. What distance did she cover after swimming 8 lengths? _____

2. On average, a person needs to consume $2\frac{1}{2}$ quarts of water a day.

a. About how many pints is that? _____

b. About how many cups? _____

c. At this rate, about how many quarts of water would a person consume in 1 year? Circle the best estimate.

100 1000 10,000 100,000

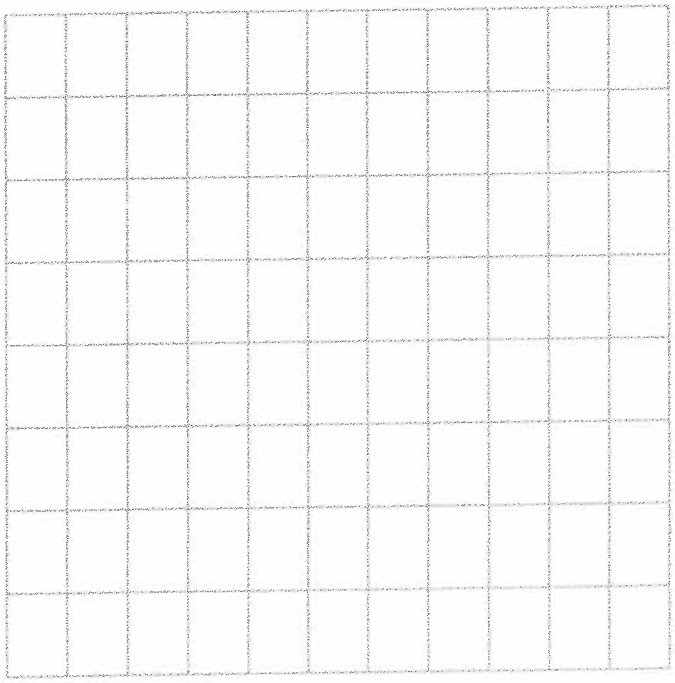
3. **a.** Draw a line segment that is $3\frac{3}{8}$ inches long.

b. By how many inches would you need to extend the segment to get a line segment that is 5 inches long? _____

4. Multiply.

a. $329 * 69 =$ _____

b. _____ $= 29 * 814$



Date Time

Math Boxes 27

1. Write the number pair for each of the following points shown on the coordinate grid.

A: (_____, _____)

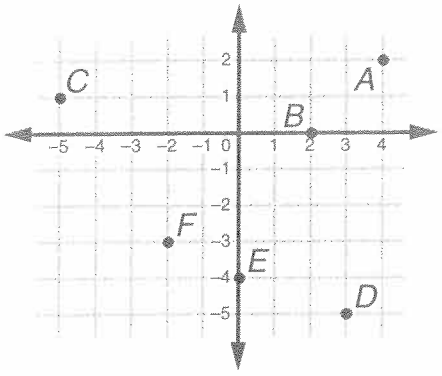
B: (_____, _____)

C: (_____, _____)

D: (_____, _____)

E: (_____, _____)

F: (_____, _____)



2. Complete.

a. 5 m = _____ cm

b. _____ cm = 700 mm

c. 900 mm = _____ cm

d. _____ cm = 3.5 m

3. Write in standard notation.

a. 9^2 = _____

b. _____ = 3^5

c. 5^3 = _____

d. 10^6 = _____

4. Add. Write your answers as fractions, whole numbers, or mixed numbers in simplest form.

a. $\frac{3}{4} + \frac{1}{6}$ = _____

b. _____ = $2\frac{1}{3} + 4\frac{7}{9}$

c. $4\frac{3}{5} + 6\frac{2}{5}$ = _____

5. Multiply.

a. 5.1 * 2.6 = _____

b. 0.07 * 9 = _____

c. _____ = 0.28 * 0.03

d. 7.55 * 0.2 = _____

Date Time

Math Boxes 28

1. Write the rule for the numbers in the table. Then complete the table.

Rule: _____

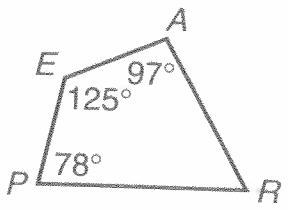
_____

in	out
12	36
0	0
	12
1.5	
	1
$2\frac{1}{2}$	$7\frac{1}{2}$

150

2. Find the measure of ∠R, without measuring the angle.

Measure of ∠R = _____.



115

3. Find the solution for each number sentence.

a. $132 = n + 85$ _____

b. $b - 43.6 = 72.8$ _____

c. $6 * h = 96$ _____

d. $14.5 = \frac{k}{4}$ _____

157

4. Divide.

a. $\frac{1556}{8} \rightarrow$ _____

b. $2045/7 \rightarrow$ _____

c. $\frac{552}{46} =$ _____

d. $\frac{2714}{36} \rightarrow$ _____

14 15

Date Time

Math Boxes 29

1. Write in standard notation.

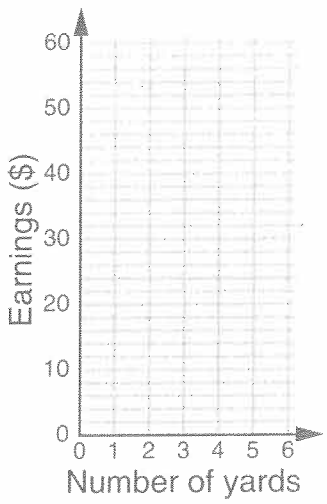
a. $\sqrt{4}$ = _____ **b.** $\sqrt{16}$ = _____ **c.** $\sqrt{49}$ = _____ **d.** $\sqrt{1}$ = _____

2. Complete the table. Then graph the data and connect the points.

Samantha earns $9 for each yard she mows.

Rule: Earnings = $9 * number of yards mowed

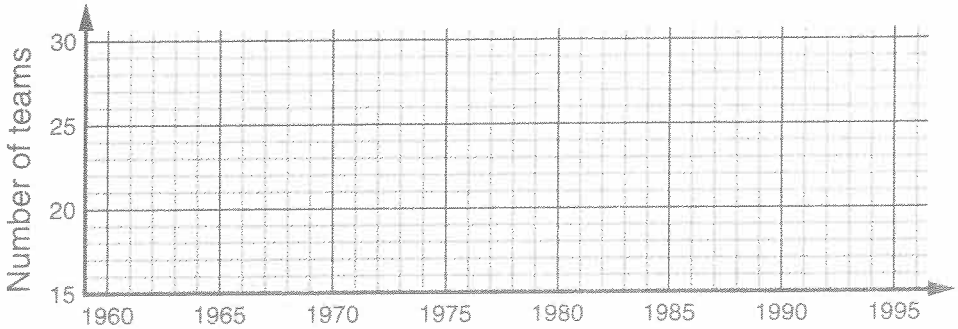
Number of yards (y)	Earnings ($) ($9 * y$)
1	
2	
3	
	45
6	



156 173

3. Make a step graph of the information shown in this table.

Years	1901–1960	1961	1962–1968	1969–1976	1977–1992	1993–1997
Number of Major League Teams	16	18	20	24	26	28



172

Source: *Total Baseball.*

Date Time

Math Boxes 30

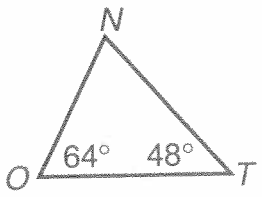
1. Write the rule for the numbers in the table. Then complete the table.

Rule: _____

in	out
24	4
0	0
	15
$\frac{12}{2}$	
	1
1	$\frac{1}{6}$

2. Find the measure of $\angle N$ without measuring the angle.

Measure of $\angle N$ = _____.



3. Find the solution for each number sentence.

a. $278 = d + 126$ _____

b. $h - 75.9 = 14.6$ _____

c. $9 * k = 108$ _____

d. $0.5 = \frac{g}{5}$ _____

4. Divide.

a. $\frac{3045}{3} \rightarrow$ _____

b. $1742/8 \rightarrow$ _____

c. $\frac{697}{29} \rightarrow$ _____

d. $\frac{4802}{47} \rightarrow$ _____

Date Time

Math Boxes 31

1. Write in standard notation.

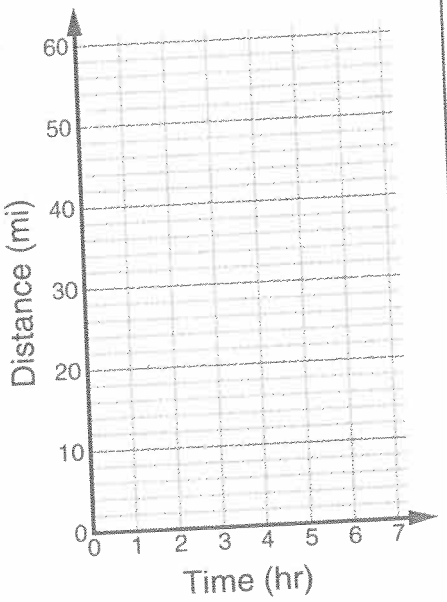
a. $\sqrt{9} =$ _____ **b.** $\sqrt{25} =$ _____ **c.** $\sqrt{81} =$ _____ **d.** $\sqrt{144} =$ _____

2. Complete the table. Then graph the data and connect the points.

Harry travels about 8 miles per hour on his bike.

Rule: Distance traveled = 8 * number of hours

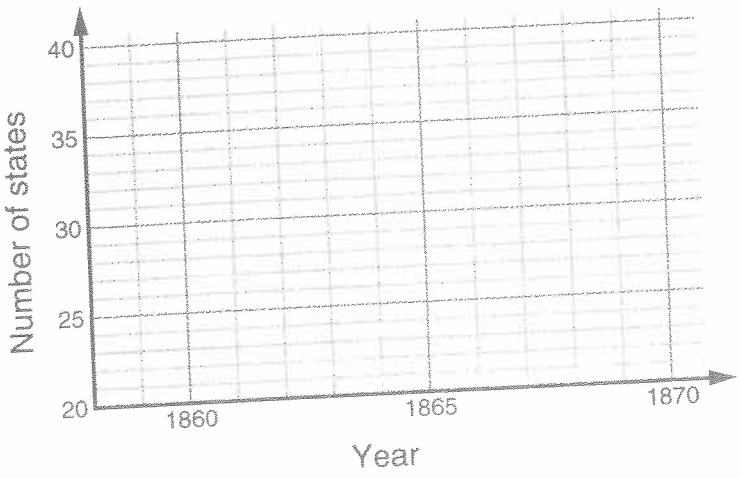
Time (hr) (h)	Distance (mi) (8 * h)
1	
2	
	24
5	
	56



3. From 1860 to 1861, eleven states seceded from the United States. All eleven states were reinstated between 1866 and 1870. (Four new states joined the Union between 1860 and 1866.)

Years	Number of States in the U.S.
1859	33
1860	32
1861–1862	23
1863	24
1864–1865	25
1866	26
1867	27
1868–1869	34
1870	37

The following table shows the number of states in the United States from 1859 to 1870. Make a step graph to display this information.



Use with Lesson 31.

Date Time

Math Boxes 35

1. Fill in the missing numbers.

Fraction	Decimal	Percent
$\frac{3}{4}$		
	0.25	
		40%
$\frac{1}{3}$		
		65%
	0.9	

43 44

2. Complete.

a. 8 millior

b. 25 billion

c. 23.5 millio

_____ th

d. 0.7 billion =

5

3. The school supply store purchased 500 notebooks. They were shipped in boxes that could hold 12 notebooks each.

How many boxes were needed to ship the entire order?

_____

133

4. Complete.

a. $\frac{1}{10}$ of 268 = _____

b. $\frac{1}{100}$ of 21,509 = _____

c. $\frac{1}{1000}$ of 7834 = _____

d. $\frac{1}{100}$ of 72 = _____

134

5. Complete the table. Use a calculator for this problem.

Words	Exponential Notation	Calculator Key Sequence	Product
five to the seventh power		5 [y^x] 7 [=]	
four to the fifth power			
sixteen to the third power			

190

Date Time

Math Boxes 36

1. Complete.

a. 25% of 32 = _____

b. 60% of 25 = _____

c. _____ = 50% of 31

d. $66\frac{2}{3}$% of 36 = _____

135

2. Insert the decimal point in the product.

a. 5.7 * 4.4 = 2 5 0 8

b. 334 * 0.2 = 6 6 8

c. 12 * 3.65 = 4 3 8

d. 0.42 * 7 = 2 9 4

e. 5.84 * 0.581 = 3 3 9 3 0 4

f. 630 * 0.063 = 3 9 6 9

52

3. Subtract. Write your answer as a fraction or mixed number in simplest form.

a. $\frac{3}{2} - \frac{5}{8}$ = _____

b. _____ = $4\frac{2}{3} - 1\frac{1}{2}$

c. $3\frac{1}{4} - 1\frac{5}{6}$ = _____

d. _____ = $10 - 4\frac{7}{10}$

32 34

4. Write each in standard notation.

a. $4 * 10^3$ = _____

b. _____ = $8 * 10^5$

c. $12 * 10^4$ = _____

d. $46.8 * 10^2$ = _____

e. _____ = $3.71 * 10^6$

6 7 8

5. Complete.

a. 4 ft = _____ in

b. 7 ft 8 in = _____ in

c. 39 in = _____ ft _____ in

d. 80 ft = _____ yd _____ ft

6. Michael is 5 years younger than Misha and 3 years older than Gary.

a. Who is the oldest? _____

b. If Gary is 12 years old, how old is Michael? _____

c. How old is the oldest of the three? _____

Date Time

Math Boxes 37

1. Draw line segments having the following lengths.

a. $1\frac{3}{4}$ inches

b. $2\frac{3}{8}$ inches

c. $\frac{9}{16}$ inch

2. Complete.

a. $\frac{1}{3}$ of 27 = _____

b. _____ = $\frac{5}{6}$ of 30

c. $\frac{4}{7}$ of 42 = _____

d. $\frac{2}{5}$ of 60 = _____

e. _____ = $\frac{3}{8}$ of 56

3. Write five names for 24. Each name must contain a multiplication sign, a division sign, and parentheses.

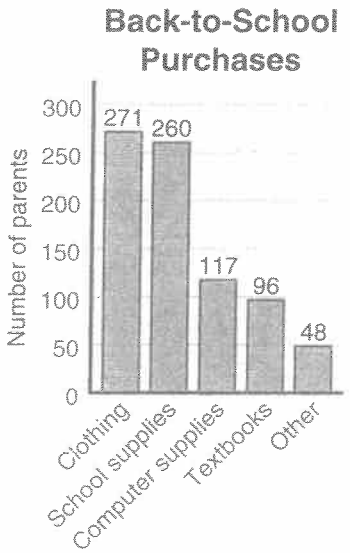
24

4. The graph below shows the kinds of items parents at an elementary school bought for their children at the start of the school year and the number of parents who bought each kind of item. (Most parents bought more than one kind of item.)

a. How many more parents bought clothing than textbooks? _____

b. About how many times as many parents bought clothing as bought computer supplies? _____

c. The parents spent an average of $95 for clothing, $21 for school supplies, $96 for computer supplies, $53 for textbooks, and $64 for other items. How much did all the parents in the school spend together? _____



Date Time

Math Boxes 38

1. Fill in the missing numbers.

Fraction	Decimal	Percent
$\frac{1}{5}$		
	0.625	
		60%
$\frac{2}{3}$		
		5%
	0.7	

2. Complete.

a. 6 million =

_____ thousands

b. 37 billion =

_____ millions

c. 1.6 billion = _____ millions

d. 9 billion =

_____ thousands

3. Seventy-seven children in the after-school program signed up to play in the basketball tournament. Each team has at least 5 players on it. If each student plays on only one team, what is the greatest number of teams that can play in the tournament? _____

4. Complete.

a. $\frac{709}{10}$ = _____

b. $\frac{83{,}261}{1000}$ = _____

c. _____ = $\frac{352}{100}$

d. $\frac{96}{100}$ = _____

5. Complete the table. Use a calculator for this problem.

Words	Exponential Notation	Calculator Key Sequence	Product
two to the eighth power		2 [y^x] 8 [=]	
nine to the sixth power			
twenty-one to the fourth power			

Date Time

Math Boxes 39

1. Complete.

a. 75% of 44 = _____

b. 80% of 70 = _____

c. _____ = 37.5% of 32

d. 90% of 36 = _____

2. Multiply.

a. 2.6 * 5.1 = _____

b. _____ = 519 * 0.7

c. 21 * 5.07 = _____

d. _____ = 0.56 * 12

3. Subtract. Write your answer as a fraction or mixed number in simplest form.

a. $7\frac{3}{4} - 3\frac{3}{8}$ = _____

b. _____ = $\frac{5}{2} - 1\frac{5}{6}$

c. $5\frac{1}{3} - 2\frac{5}{9}$ = _____

d. _____ = $17 - 13\frac{4}{5}$

4. Write each in scientific notation.

a. 7000 = _____

b. _____ = 900,000

c. 250,000 = _____

d. 2960 = _____

e. _____ = 50,800

5. Complete.

a. 4 qt = _____ pt

b. 9 gal 2 qt = _____ qt

c. 21 c = _____ pt _____ c

d. 54 qt = _____ gal _____ qt

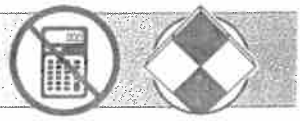
6. In 5 years, Gina will be twice as old as Scottie. Scottie is 8 years old now.

a. How old will Gina be in 5 years? _____

b. How old is Gina now? _____

Date Time

Math Boxes 42



1. The results of a survey are shown in the table below. Fill in the percent column. Then make a circle graph to display the results of the survey shown in the table.

Fruit	Number of Votes	Percent of Total
Apples	20	
Bananas	12	
Grapes	5	
Oranges	8	
Other	5	
Total	50	

2. Write 5 names for 3.6. You must use addition or multiplication.

3.6

3. Make each sentence true by inserting parentheses.

a. $4 * 7 - \frac{6}{3} = 26$

b. $3^3 - \frac{49}{7} + 12 = 8$

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

d. $6 + \frac{15}{3} - 2 * 5 = 1$

e. $2\frac{5}{8} - \frac{3}{4} + \frac{1}{2} = 1\frac{3}{8}$

Date Time

Math Boxes 43

1. a. What is an acute angle?

_____

_____

_____

b. What is an obtuse angle?

_____

_____

_____

c. Draw a triangle that has three acute angles.

2. a. Use a compass to draw a circle whose circumference is about 15.7 centimeters. Use the π key on a calculator or 3.14 as the value for π.

b. Describe what you did to solve the problem.

_____

_____

_____

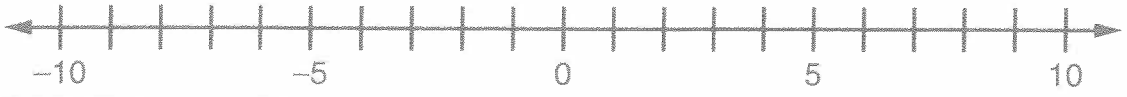
3. Solve: $\frac{4173}{62} \rightarrow$ _____

4. Solve.

	Solution
a. $c - 46 = 32$	_____
b. $\frac{w}{4} = 14$	_____
c. $(3 * q) - 6 = 9$	_____
d. $8.7 + d = 15.2$	_____

5. Plot each number on the number line and write the letter label for the point.

A: 8 *B:* −6 *C:* 3.5 *D:* the opposite of 5



Date Time

Math Boxes 45

1. Complete.

a. $\frac{1}{8}$ of 48 = _____

b. $\frac{5}{9}$ of 90 = _____

c. $\frac{2}{7}$ of 35 = _____

d. $\frac{3}{4}$ of 64 = _____

e. $\frac{4}{5}$ of 800 = _____

134

2. Find the perimeter of a regular hexagon whose sides are 12.7 centimeters long.

Perimeter = _____

116 73

3. Subtract.

48 49

a. 23.72 − 15.09 = _____

b. 7.3 − 2.81 = _____

c. 25 − 0.25 = _____

4. Use your calculator to complete the table.

7 8

Problem	Calculator Display	Scientific Notation	Standard Notation
$100{,}000^3$		$1 * 10^{15}$	1,000,000,000,000,000
$9{,}000{,}000^2$			
$20{,}000^5$			
$30^4 + 30^4$			
$30^7 + 70^3$			

Date Time

Math Boxes 46

1. Rename each fraction as a mixed number or whole number.

a. $\frac{17}{4}$ = _____

b. _____ = $\frac{13}{6}$

c. $\frac{28}{5}$ = _____

d. $\frac{36}{9}$ = _____

e. _____ = $\frac{43}{3}$

24

2. Estimate the answers.

a. 4 ft is about _____ cm.

b. 5 mi is about _____ km.

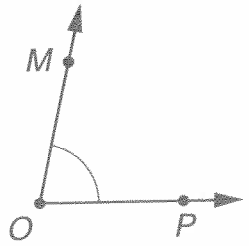
c. 6 in is about _____ cm.

d. 10 m is about _____ yd.

e. 8 lb is about _____ kg.

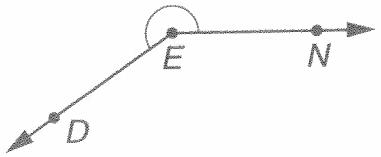
3. Measure each angle to the nearest degree.

a.



Measure of $\angle MOP$ is _____.

b.



Measure of reflex $\angle DEN$ is _____.

112 113

4. Divide.

15

a. $\frac{378}{16}$ → _____

b. 596/12 → _____

Date Time

Math Boxes 47

1. Solve. Solution

a. $\frac{n}{6} = 4$ _____

b. $\frac{42}{b} = 6$ _____

c. $\frac{5}{8} = \frac{t}{32}$ _____

d. $\frac{d}{18} = \frac{4}{6}$ _____

157 158

2. Solve.

a. $7 + (-12) =$ _____

b. $-8 + 8 =$ _____

c. $-2 + (-10) =$ _____

d. $-2 + 13 =$ _____

57

3. The spreadsheet at the right shows the number of baskets and free throws scored by players on a basketball team. Each basket is worth 2 points, and each free throw is worth 1 point. Fill in the total points.

	A	B	C	D
1	Player	Baskets	Free Throws	Total Points
2	Joe	3	3	9
3	Dion	1	2	
4	Fran	5	0	
5	Sam	8	4	
6	Mike	4	3	
7	Total			

a. What information is shown in Cell B4? _____

b. The greatest number of points scored by a player is shown in Cell _____.

c. Circle the correct formula for calculating the number of points Sam scored.

D5 = B5 + C5 D5 = (2 * B5) + C5 D5 = B5 + (2 * C5)

d. Circle the formula you should **not** use to calculate the total number of points the team scored.

D7 = B7 + C7 D7 = D2 + D3 + D4 + D5 + D6 D7 = (2 * B7) + C7

174

Date Time

Math Boxes 48

1. Complete.

a. $\frac{2}{5}$ of 75 = _____

b. $\frac{3}{8}$ of 24 = _____

c. $\frac{5}{6}$ of 48 = _____

d. $\frac{1}{2}$ of $2\frac{1}{2}$ = _____

e. $\frac{3}{12}$ of 32 = _____

2. The perimeter of a regular pentagon is 38 feet. What is the length of each side of the pentagon?

Length of side = _____

3. Subtract.

a. 156.41 − 25.96 = _____

b. 28.9 − 8.37 = _____

c. 64 − 4.75 = _____

4. Use your calculator to complete the table.

Problem	Calculator Display	Scientific Notation	Standard Notation
$3{,}000{,}000^2$			
$400^2 - 800^4$			
$80^4 + 40^8$			
$10^9 * 10^9$			
$\frac{70^{12}}{70^4}$			

Date Time

Math Boxes 49

1. Rename each fraction as a mixed number or whole number.

a. 25/3 = _____

b. _____ = 17/5

c. 46/9 = _____

d. 35/7 = _____

e. _____ = 68/8

2. Estimate the answers.

a. 5 L is about _____ qt.

b. 3 km is about _____ mi.

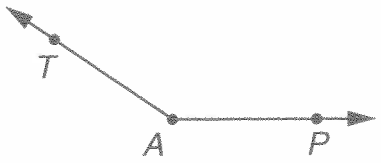
c. 10 cm is about _____ in.

d. 20 yd is about _____ m.

e. 8 kg is about _____ lb.

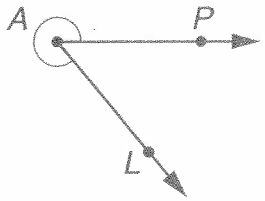
3. Measure each angle to the nearest degree.

a.



Measure of $\angle TAP$ = _____°.

b.



Measure of reflex $\angle LAP$ = _____°.

4. Divide.

a. $\frac{523}{18}$ → _____

b. 2609/73 → _____

Date Time

Math Boxes 50

1. Solve. Solution

a. $\frac{q}{8} = 16$ _____

b. $\frac{60}{p} = 5$ _____

c. $\frac{3}{7} = \frac{r}{28}$ _____

d. $\frac{f}{21} = \frac{2}{14}$ _____

2. Add.

a. $9 + (-4) =$ _____

b. $15 + (-15) =$ _____

c. $-12 + (-7) =$ _____

d. $-5 + 13 =$ _____

3. Darin charges $3 an hour to baby-sit on weekdays and $4 an hour on weekends. The spreadsheet below is a record of the baby-sitting he did in a week.

	A	B	C
1	Day of Week	Number of Hours	Earnings
2	Monday	4	
3	Wednesday	2	
4	Saturday	3	
5	Sunday	5	
6	Total		

a. Fill in the missing numbers on the spreadsheet.

b. What information is shown in Cell B4? _____

c. The least number of hours he baby-sat is shown in Cell _____.

d. Circle the correct formula for calculating Darin's earnings on Wednesday.

C3 = 2 * C2 C3 = 3 * B3 C3 = 4 * C2

e. Circle the formula Darin should **not** use to calculate his total earnings.

C6 = C2 + C3 + C4 + C5 C6 = 3.5 * B6

C6 = (3 * B2) + (3 * B3) + (4 * B4) + (4 * B5)

Date Time

Math Boxes 51

1. The table at the right shows how much a person weighing 100 pounds on Earth would weigh on each of the planets in the Solar System.

Planet	Weight (lb)
Mercury	37
Venus	88
Earth	100
Mars	38
Jupiter	264
Saturn	115
Uranus	93
Neptune	122
Pluto	6

a. On which planet would a person weigh about $\frac{1}{6}$ as much as on Mercury?

_____

b. On which planet would a person weigh about 3 times as much as on Mars?

_____

c. On which planet would a person weigh about $2\frac{1}{2}$ times as much as on Earth?

_____

130

2. Subtract.

a. $-2 - 5 =$ _____

b. $4 - 7 =$ _____

c. $8 - (-3) =$ _____

d. $-6 - (-1) =$ _____

58

3. Use your calculator to rename each fraction as a decimal.

a. $\frac{5}{16} =$ _____

b. $\frac{96}{128} =$ _____

c. $\frac{28}{51} =$ _____

d. $\frac{247}{18} =$ _____

46

4. Draw and label the following angles.

a. $\angle POL$ 135°

b. $\angle MAL$ 64°

112 114 113

Date Time

Math Boxes 52

1. Rename each mixed number as a fraction.

a. _____ $= 3\frac{1}{3}$

b. $6\frac{2}{5} =$ _____

c. $17\frac{1}{2} =$ _____

d. _____ $= 9\frac{1}{2}$

24

2. Solve.

a. Marvin's mother is 5 times as old as Marvin. Marvin's mother is 25. How old is Marvin? _____

b. In a few years, Marvin's mother will be 3 times as old as Marvin. How old will Marvin be then? _____

How old will Marvin's mother be? _____

3. The highest point in North America is the top of Mt. McKinley, Alaska, with an elevation of 20,320 feet. The highest point in the lower 48 states of the United States is the top of Mt. Whitney, California, with an elevation of 14,494 feet. The lowest point in the United States is in Death Valley, California, at 282 feet below sea level.

a. How much higher is Mt. McKinley than Mt. Whitney? _____

b. How many feet below Mt. McKinley is Death Valley? _____

56

4. The table below shows the results of a survey of people's favorite Olympic sports. Fill in the missing information in the table. Then use a protractor to make a circle graph of the results. DO NOT USE THE PERCENT CIRCLE.

Favorite Sport	Number of People	Percent of Total
Gymnastics	21	
Swimming	9	
Basketball	24	
Other	6	
Total		

149

Date Time

Math Boxes 54

1. Rename each mixed number as a fraction.

a. _____ $= 5\frac{1}{2}$

b. $3\frac{3}{4} =$ _____

c. $19\frac{1}{3} =$ _____

d. _____ $= 4\frac{2}{5}$

2. Solve.

a. Sara is $\frac{1}{4}$ the age of her father. Sara's father is 60. How many years older than Sara is Sara's father? _____

b. How many years ago was Sara $\frac{1}{10}$ her father's age? _____

c. How old was she then? _____

3. The highest point on Earth is the top of Mt. Everest, which is 8848 meters above sea level. The lowest point on land is the Dead Sea, which is 399 meters below sea level. The lowest point on Earth's surface is thought to be in the Pacific Ocean at 11,034 meters below sea level.

a. How much higher is the top of Mt. Everest than the Dead Sea? _____

b. How many more meters below sea level is the lowest point on Earth than the Dead Sea? _____

4. The table below shows the results of a survey in which pediatricians were asked to name their favorite way of treating their own children's coughs and colds. Use a protractor to make a circle graph of the results. DO NOT USE THE PERCENT CIRCLE.

Treatment	Percent of Pediatricians
Do nothing	62%
Rest and fluids	17%
Medicine	13%
Other	8%

New Jersey Assessment of Skills and Knowledge
2007 Grade 6
MATHEMATICS REFERENCE SHEET

Use the information below to answer questions on the Mathematics section of the 2007 Grade Six Assessment of Skills and Knowledge (NJ ASK 6).

The sum of the measures of the interior angles of a triangle = 180°

Distance = rate × time

Simple Interest Formula: $A = p + prt$

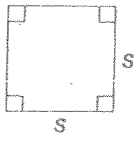
A = amount after t years; p = principal; r = annual interest rate; t = number of years

$\pi \approx 3.14$ or $\frac{22}{7}$

Square

Area = s^2

Perimeter = $4s$



Rectangle

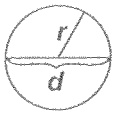
Area = lw

Perimeter = $2l + 2w$

Circle

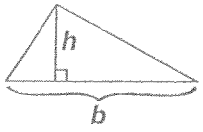
Area = πr^2

Circumference = $2\pi r$ = πd



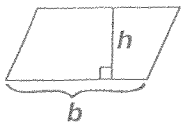
Triangle

Area = $\frac{1}{2}bh$



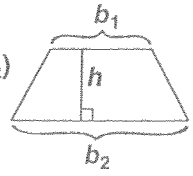
Parallelogram

Area = bh



Trapezoid

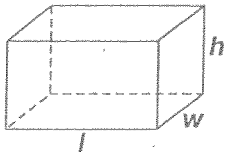
Area = $\frac{1}{2}h(b_1 + b_2)$



Rectangular Prism

Volume = lwh

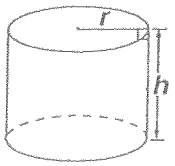
Surface Area = $2lw + 2wh + 2lh$



Cylinder

Volume = $\pi r^2 h$

Surface Area = $2\pi rh + 2\pi r^2$



USE THE FOLLOWING EQUIVALENTS FOR YOUR CALCULATIONS

60 seconds = 1 minute 60 minutes = 1 hour 24 hours = 1 day 7 days = 1 week 12 months = 1 year 365 days = 1 year	12 inches = 1 foot 3 feet = 1 yard 36 inches = 1 yard 5,280 feet = 1 mile 1,760 yards = 1 mile	10 millimeters = 1 centimeter 100 centimeters = 1 meter 10 decimeters = 1 meter 1000 meters = 1 kilometer
8 fluid ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon 1000 milliliters (mL) = 1 liter (L)	16 ounces = 1 pound 2,000 pounds = 1 ton 1000 milligrams = 1 gram 100 centigrams = 1 gram 10 grams = 1 dekagram 1000 grams = 1 kilogram	