Name: _____

Rising 7th Grade

Practice 1-1

Write in expanded form.

1a. 83,007,100 **b.** 5.008407

Round each number to its greatest place (nonzero place for decimals) or to the nearest cent.

2a. 67,824 **b.** $18.375 **c.** 8.0957

Order from least to greatest.

3. 47,396,000; 47,963,000; 47,369,000

4. 0.2954; 0.0298; 0.29504; 0.29054

Estimate the sum or difference.

5a. $\begin{array}{r} 27.14 \\ +\,31.762 \\ \hline \end{array}$ **b.** $\begin{array}{r} 0.275 \\ +\,3.8 \\ \hline \end{array}$ **c.** $\begin{array}{r} 43.09 \\ -\,17.8 \\ \hline \end{array}$

Use a related sentence to find the missing number or decimal.

6a. $n + 86 = 132$ **b.** $n - 0.03 = 0.7$

Compute. Watch for + and − signs.

7a. $\begin{array}{r} 9{,}392{,}738 \\ +\,3{,}678{,}907 \\ \hline \end{array}$ **b.** $\begin{array}{r} 73 \\ -\,8.92 \\ \hline \end{array}$

8a. 341,086 − 87,794 **b.** $80 − $35.97

Problem Solving

9. Which country has the greatest area—Brazil: 3,284,426 square miles; Canada: 3,851,787 square miles; or the United States: 3,623,420 square miles? the least?

10. Luis drove from New York to Chicago. The odometer read 32,949 when he started. It read 33,751 when he reached Chicago. How far did Luis travel?

11. Find the sum of 8.35, 9.046, 0.7185, 30, and 6.02.

12. Ed ran 9.75 mi on Friday and 13.6 mi on Saturday. How much farther did he run on Saturday?

Answer

1a
1b
2a
b
c
3
4
5a
b
c
6a
b
7a
b
8a
b
9
10
11
12

Practice 2-1

Write each product in exponential form.

1. $4 \times 4 \times 4$ **2.** $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8$

3. $10 \times 10 \times 10 \times 10 \times 10 \times 10$

4. $200 \times 200 \times 200 \times 200$

Find the product.

5a. 40×700 **b.** 500×8000 **c.** 186×300

6a. 508×720 **b.** 709×5309 **c.** $650 \times \$38.75$

7a. $\begin{array}{r} 917 \\ \times\ 38 \\ \hline \end{array}$ **b.** $\begin{array}{r} 8236 \\ \times\ 79 \\ \hline \end{array}$ **c.** $\begin{array}{r} \$795.03 \\ \times\ 28 \\ \hline \end{array}$

8a. $\begin{array}{r} 4752 \\ \times\ 809 \\ \hline \end{array}$ **b.** $\begin{array}{r} 30{,}817 \\ \times\ 450 \\ \hline \end{array}$ **c.** $\begin{array}{r} \$39.87 \\ \times\ 506 \\ \hline \end{array}$

9a. 1000×0.463 **b.** $910 \times 546{,}019$

Write the standard numeral.

11. $(6 \times 10^5) + (4 \times 10^3) + (2 \times 10^2) + (5 \times 1)$

12a. 5^3 **b.** 3^5 **c.** 9.14×10^4

Problem Solving

13. If a meteor travels 1899 miles per minute, how far will the meteor travel in 2 hours?

14. The interior temperature of the sun is about 35,000,000°F. Write this temperature in expanded form using exponents.

15. A large city has 375 office buildings. There is an average of 425 offices in each building. About how many offices are there in the city?

16. Snow fell at a rate of 0.6 cm per hour. At that rate, how much snow fell in 5 hours?

17. The distance from Pluto to the Sun is about 5,910,000,000 km. Write the number in scientific notation.

Answers

1.
2.
3.
4.

5a
b
c

6a
b
c

7a
b
c

8a
b
c

9a
b

11
12a
b
c
13
14
15
16
17

Practice 3-1

Estimate the quotient.

1a. $31\overline{)3371}$ **b.** $297\overline{)6143}$

2a. $87\overline{)\$180{,}000}$ **b.** $117\overline{)\$54{,}000}$

Divide. Use R to write remainders.

3a. $40\overline{)1200}$ **b.** $200{,}000 \div 400$

4a. $5\overline{)7826}$ **b.** $9\overline{)3618}$ **c.** $3\overline{)\$75.21}$

5a. $29\overline{)5007}$ **b.** $82\overline{)6173}$ **c.** $12\overline{)4624}$

6a. $15\overline{)\$2208.75}$ **b.** $326\overline{)1313}$

7a. $730\overline{)25{,}550}$ **b.** $417\overline{)12{,}510}$

Evaluate each expression.

8a. $3 \cdot x \cdot 4$, when $x = 6$ **b.** $425 \div y$, when $y = 5$

9a. $56 \cdot 3201$ **b.** $0.5 \times 6 \times 20.7$

Problem Solving

11. Every morning, 35,875 riders use public transportation to get to school or work. If a bus can hold 53 riders, estimate how many busloads of riders there are each morning.

12. Minnesota has an area of 86,943 square miles and 87 counties. What is the average number of square miles per county?

13. Kareem's Computer Store buys 19 pieces of Spelling Tutor software. The bill is $711.55. What is the average cost of each piece of software?

14. Two hundred fourteen bags of concrete mix weigh 11,984 lb. How much does one bag weigh?

Answers

1a
b
2a
b
3a
b
4a
b
c
5a
b
c
6a
b
7a
b
8a
b

9a
b
11
12
13
14

Practice 4-1

Compute.

1a. $3 + 7 \times 9 - 5$ **b.** $(8 \div 2) \times (7 + 9) \times 10^2$

2a. $9 \times 6 \div 3 + 17 - 8$ **b.** $39 - 3 \times 4 \div 3$

Translate as an algebraic expression or equation.

3. the difference between y and 16

4. c divided by 4 is 10.

Evaluate each expression.

5a. $27 + 3ab^2$, when $a = 4$ and $b = 2$ **b.** $(x - 1)^2 + y \div z$, when $x = 6$, $y = 25$, and $z = 5$

Solve and check.

6a. $x + 9.373 = 21.627$ **b.** $t - 360.48 = 721.37$

7a. $c \times 36 = 9$ **b.** $d \div 3 = 1.8941$

Use the Volume formula, $V = \ell \times w \times h$, or the Perimeter formula, $P = 2(\ell + w)$, to find each missing dimension.

8. $V = 3750$ ft^3, $\ell = 50$ ft, $w =$? ft, $h = 3$ ft

9. $P = 48$ yd, $\ell = 14$ yd, $w =$? yd

Problem Solving

Translate into an equation. Then solve.

10. A number decreased by 7 is 30. Find the number.

11. 45 is equal to the product of a number and 3. Find the number.

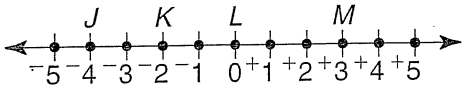
12. Ed bought 4 cans of peas at 2 for \$1.79, 3 cans of pears at \$.69 each, and 5 cans of corn at 3 cans for \$2.07. How much did he spend?

Answers

1a
b
2a
b
3
4
5a
b
6a
b
7a
b
8
9
10
11
12

Practice 5-1

Write the integer that matches each letter on the number line.



1a. *J* **b.** *K* **c.** *L* **d.** *M*

Express each as an integer.

2a. loss of 8 lb **b.** 7 degrees warmer

3a. 50 ft below sea level **b.** $25 raise

Name the opposite of each integer.

4a. -5 **b.** $+8$ **c.** -16 **d.** $+7$

Compare. Write $<$ or $>$.

5a. $+6$? -6 **b.** -3 ? -7

6a. 0 ? -2 **b.** -5 ? $+1$

7a. -6 ? -1 **b.** $+8$? -10

Compute.

8a. $+3 + +8$ **b.** $-2 + +5$ **c.** $-7 + -8$

9a. $+6 - -5$ **b.** $-8 - -9$ **c.** $-5 - +3$

10a. $+10 - +4$ **b.** $+3 - -3$ **c.** $+8 - +12$

11a. -8×-15 **b.** $-52 \div +4$ **c.** $-1 \div -1$

Problem Solving

14. Arrange in order from least to greatest: -5; -8; $+3$; -4; 0.

15. The price of a stock fell 8 points on Monday and rose 3 points on Tuesday. Find the total change over both days.

16. The temperature was -16°F. It dropped 7 degrees. Find the new temperature.

17. An archaeological site is 3 m above sea level. A discovery is made 4 m higher. How far above or below sea level is the discovery?

Answer

1a
b
c
d
2a
b
3a
b
4a
b
c
d
5a
b
6a
b

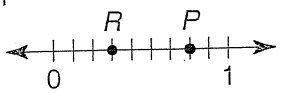
7a
b
8a b c
9a b c
10a b c
11a b c

14
15
16
17

Practice 6-1

Write a fraction for each point.

1a. R b. P



Complete.

2a. $\frac{5}{7} = \frac{n}{28}$ b. $\frac{4}{9} = \frac{24}{n}$ c. $\frac{18}{n} = \frac{2}{5}$

Write each fraction in simplest form.

3a. $\frac{18}{27}$ b. $\frac{15}{21}$ c. $\frac{16}{40}$

Compare. Write <, =, or >.

4a. $\frac{17}{23} \_?\_ \frac{7}{23}$ b. $\frac{5}{6} \_?\_ \frac{9}{10}$

5a. $\frac{7}{8} \_?\_ \frac{49}{56}$ b. $\frac{1}{2} \_?\_ \frac{3}{5}$

Write in order from least to greatest.

6a. $\frac{2}{3}, \frac{1}{5}, \frac{5}{6}$ b. $\frac{5}{9}, \frac{1}{4}, \frac{5}{12}$

7a. $1\frac{7}{12}, 1\frac{1}{2}, 1\frac{2}{3}$ b. $2\frac{2}{5}, 2\frac{2}{3}, 2\frac{2}{15}$

Practice 6-2

Find the GCF of each pair of numbers.

1a. 8 and 12 b. 15 and 24

2a. 10 and 45 b. 7 and 28

Find the LCM of each pair of numbers.

3a. 7 and 10 b. 8 and 12

4a. 6 and 15 b. 14 and 42

Rename as an improper fraction.

5a. $3\frac{2}{3}$ b. $9\frac{7}{10}$ c. $5\frac{1}{4}$

Rename as a fraction in simplest form.

6a. 0.54 b. 0.05 c. 0.75

Rename as a decimal.

7a. $4\frac{7}{8}$ b. $\frac{1}{6}$ c. $5\frac{2}{3}$

8a. $\frac{9}{16}$ b. $3\frac{4}{100}$ c. $6\frac{1}{8}$

Answers 6-1

1a b

2a b c

3a b c

4a b

5a b

Tell whether each is *prime* or *composite*.

8a. 9 b. 19 c. 49

Find the prime factorization and write in exponent form.

9a. 26 b. 40 c. 56

Problem Solving

10. Which fraction is close to $\frac{1}{2}$: $\frac{6}{11}, \frac{13}{15}, \frac{1}{5}$?

11. Of 24 dogs, 9 are beagles, 5 are collies, and the rest are poodles. What fractional part are poodles?

12. Marla ate $\frac{3}{8}$ of a melon. Leah ate $\frac{2}{3}$ of a melon. Who ate more?

13. List all the prime numbers between 20 and 30.

14. Which is farthest: $7\frac{4}{5}$ mi, $7\frac{3}{4}$ mi, or $7\frac{7}{10}$ mi?

6a b

7a b

8a b c

9a b c

10

11

12

13

14

Answer 6-2

1a 1b 2a 2b

3a 3b 4a 4b

5a b c

6a b c

7a b c

8a b c

Practice 7-2

Add or subtract. Write each answer in simplest form.

1a. $2\frac{2}{3} + 3\frac{1}{5}$ **b.** $6\frac{5}{8} + 3\frac{1}{2}$ **c.** $12\frac{1}{6} + 8\frac{4}{5}$

2a. $3\frac{3}{4} - 1\frac{1}{2}$ **b.** $9\frac{1}{3} - 6\frac{1}{2}$ **c.** $11 - 8\frac{3}{7}$

3a. $7\frac{4}{7} - 5\frac{5}{6}$ **b.** $4 - 2\frac{2}{3}$ **c.** $8\frac{1}{3} - 5\frac{3}{4}$

Evaluate each expression.

4a. $a + b + 4\frac{11}{21}$, when $a = 3\frac{1}{7}$ and $b = 5\frac{2}{3}$

4b. $x - y$, when $x = 16$ and $y = 3\frac{5}{6}$

Solve and check.

5a. $c + \frac{2}{3} = \frac{11}{12}$ **b.** $t + 2\frac{1}{3} = 5\frac{1}{3}$

6a. $q - \frac{3}{5} = \frac{1}{15}$ **b.** $m - 3\frac{2}{5} = 7$

Problem Solving

7. Add $2\frac{5}{6}$ to the difference between 5 and $2\frac{7}{12}$.

8. A team practiced $2\frac{1}{2}$ h before lunch and then $1\frac{3}{4}$ h after lunch. What is the total time it practiced?

9. A recipe calls for $3\frac{1}{3}$ c of white flour, $1\frac{1}{4}$ c of whole wheat flour, and $\frac{1}{2}$ c of rice flour. Find the total amount of flour in the recipe.

10. Jeannette has three jump ropes: $6\frac{1}{2}$ ft, $9\frac{2}{3}$ ft, and $7\frac{1}{8}$ ft. Estimate the total length.

11. On Monday, a certain stock opened at $67\frac{1}{8}$ points. By Friday its value was 80 points. Find its increase in value.

12. Ted weighed $145\frac{1}{2}$ lb. After 2 months of dieting, he weighed $136\frac{1}{3}$ lb. How much weight did he lose?

13. Mary needs $6\frac{2}{5}$ yd of ribbon. She has $4\frac{3}{4}$ yd. How much more ribbon does she need?

Answers

1a
b
c
2a
b
c
3a
b
c
4a
b
5a
b
6a
b

7
8
9
10
11
12
13

8-1

Write the reciprocal of each number.

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

Divide.

6a. $10\frac{2}{3} \div 1\frac{1}{9}$ **b.** $4\frac{1}{7} \div 2$ **c.** $\$10 \div 3\frac{1}{3}$

7a. $7 \div \frac{1}{4}$ **b.** $21 \div \frac{7}{8}$ **c.** $\frac{3}{4} \div 6$

Practice 8-2

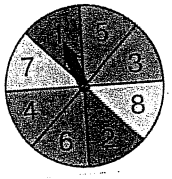
Compute. Use the order of operations rules.

1a. $6 \times \frac{3}{4} + \frac{1}{2}$ **b.** $\frac{2}{3} + \frac{1}{3} \times (9 + 6)$

2a. $9 \div \frac{2}{3} - \frac{7}{12}$ **b.** $\frac{3}{4} - \frac{5}{6} \div (2 + 8)$

Use a coin and the spinner for problems 3–4.

3. Make a tree diagram to list all possible outcomes.



4. Find the probability.
- **a.** *P* (heads, 6)
- **b.** *P* (tails, <5)

Use a number cube labeled 1–6 to find the probability of each event.

5a. *P* (1 or 3) **b.** *P* (7) **c.** *P* (1 through 6)

8-2

Answers 8-2

1a
1b
2a
2b
3
4
5a b c

Practice 8-1

Multiply. Use the GCF whenever possible.

1a. $\frac{3}{4} \times \frac{5}{6} \times \frac{7}{10}$ **b.** $\frac{9}{10}$ of 80

2a. $3\frac{4}{5} \times 1\frac{7}{8} \times 2\frac{1}{2}$ **b.** $5 \times \frac{7}{8} \times 3\frac{1}{4}$

Evaluate each expression.

8a. $4\frac{7}{8}\,t$, when $t = \frac{4}{5}$ **b.** $n \div 1\frac{2}{3}$, when $n = 5\frac{1}{2}$

Solve for *n*.

9a. $n \div \frac{9}{10} = 3$ **b.** $6n = 22$

Problem Solving

10. Jason has saved \$80. He spent $\frac{3}{4}$ of it on a new camera. How much did the camera cost?

11. A sofa was on sale for $\frac{1}{3}$ off the regular price of \$360. Find the sale price of the sofa.

12. Lia bought $\frac{3}{4}$ yd of felt. She used $\frac{5}{6}$ of it to make a banner. How much of the felt did she use for the banner?

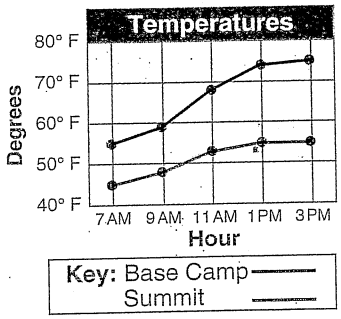
13. Which has the greater product: $3\frac{1}{2} \times \frac{1}{3}$ or $6\frac{1}{4} \times \frac{4}{5}$?

Answers 8-1

1a
1b
2a
2b
5a b c
6a b c
7a b c
8a b
9a b
10
11
12
13

Practice 9-1

Use the double line graph for problems 1–3.



1. Find the temperature at the summit at 7 A.M.
2. Estimate the difference in temperatures at 9 A.M.
3. Between what hours did the temperatures change least?

Use the given data for problems 4–6.

Ages of Guests at a Party

19	48	67	11	45
29	11	44	11	36
28	12	10	39	11
35	12	18	40	11

4. Organize the data in a frequency table.
5. Use the data to make:
   a. a line plot
   b. a stem-and-leaf plot
6. Find the mode, range, and median of the data in problem 4.
7. In 5 games, Jan scored 15, 18, 20, 12, and 20 points. What is her mean score?
8. Ali's scores on her first four math tests were 98, 84, 88, and 92. What score must she make on the fifth test to have the mean of the five tests equal 90?
9. The table shows how many people saw the circus. Make a double bar graph to display the data.

Attendance

Days	Matinee	Evening
Sun.	350	450
Mon.	100	150
Tue.	125	250
Wed.	300	350

10. High temperature readings during one 5-day period were 72, 63, 70, 68, and 77 degrees Fahrenheit. Give the range, median, mean, and mode for this set of data.

Answers

1

2

3

6

7

8

9

10

4

5

6. Graph each set of points in a coordinate grid.
   a. $A(^-3, ^-3)$, $B(^+2, ^-5)$, $C(^+2, ^+4)$, $D(^-1, ^+2)$
   b. $E(0, ^-1)$, $F(^+1, ^-2)$, $G(^-2, ^+1)$, $H(^+3, ^+1)$
   c. $I(^-1, ^-1)$, $J(^+2, ^-2)$, $K(^-3, ^-2)$, $L(^-4, ^-4)$

7. Name the points in exercise 6 that lie in each quadrant.
   a. quadrant I
   b. quadrant II
   c. quadrant III
   d. quadrant IV

Practice 11-1

Write each ratio in simplest form.

1a. 5 to 15 **b.** 4 to 24 **c.** 8 to 56

2a. 30 : 60 **b.** 27 : 42 **c.** 75 : 125

Find the missing term in each proportion.

3a. $\frac{5}{7} = \frac{25}{n}$ **b.** $\frac{3}{12} = \frac{n}{4}$ **c.** $\frac{1}{30} = \frac{1}{n}$

4a. $n : 3 = 0.5 : 5$ **b.** $2.6 : 1.7 = n : 10.2$

Practice 12-1

Compute mentally.

1a. 10% of 90 **b.** 50% of 60

2a. $33\frac{1}{3}$% of 75 **b.** 75% of 16

Answers 11-1

1a 1b 1c

2a 2b 2c

3a 3b 3c

4a 4b

Answers 12-1

1a

1b

2a

2b

Practice 13-1

Complete.

1a. 7.3 m = ? cm **b.** 40 kg = ? g

2a. 27.4 L = ? kL **b.** 73 dm = ? m

3a. 15 ft = ? yd **b.** 14 pt = ? qt

4a. 3 mi = ? ft **b.** 4T = ? lb

Compute.

5a.
$$\begin{array}{r} 7 \text{ ft } 11 \text{ in.} \\ +\,4 \text{ ft } \ 9 \text{ in.} \\ \hline \end{array}$$

b.
$$\begin{array}{r} 9 \text{ qt} \\ -\,5 \text{ qt } 1 \text{ pt} \\ \hline \end{array}$$

6a. (2 yd 5 in.) × 3 **b.** (3 h 20 min) ÷ 4

Measure each line segment to the nearest $\frac{1}{8}$ in. and $\frac{1}{16}$ in.

7.

8.

Answers 13-1

1a

1b

2a

2b

3a

3b

4a

4b

5a

5b

6a

6b

7

8