June, 2019

Dear rising Town 7th grader,

All of your math teachers back at Town hope you're enjoying your summer! We know that summer is a chance to take a break, but many students choose to read books and do some extra practice in their other subjects in order to stay sharp for the next school year. If you're reading this, then you're one of those students -- good job! :)

To make sure we can start the school year off right, we created this assignment for you to work on (if you choose to) over the summer to keep your skills sharp and your mind focused. We know you learned a lot in 6th grade, and this should help you to remember it! Each section has practice problems on some of the big ideas from 6th grade that you will be doing more with next year. If you are spending some time working with someone on math, feel free to share this packet with them and go through it together. The goal here is for you to enter 7th grade understanding the biggest ideas from 5th grade.

Sincerely,

The Town Math Teachers

Name: _____ **Class:** _____ **Date:** _____ **ID: A**

6th grade summer packet

Short Answer

1. Jill says that 6 is a common factor of 56 and 36. Is she correct? Explain.

2. "Sam" and "Martha" are the local names for two lighthouses that guard a particularly dangerous part of the coast. Sam blinks every 12 seconds and Martha blinks every 8 seconds. They blink together at midnight. How many seconds will pass before they blink together again?

3. Use concepts you have learned in this unit to make a mystery number question. Each clue must contain at least one word from your vocabulary list.

4. Chairs for a meeting are arranged in six rows. Each row has the same number of chairs.

   a. What is the minimum possible number of chairs that could be in the room?

   b. Suppose 100 is the maximum number of chairs allowed in the meeting room. What other numbers of chairs are possible?

5. **a.** List two pairs of numbers whose least common multiple (LCM) is the same as their product. For example, the least common multiple of 5 and 6 is 30 and $5 \times 6 = 30$.

   b. List two pairs of numbers whose least common multiple is smaller than their product. For example, the least common multiple of 6 and 9 is 18 and 18 is less than 6×9.

   c. For a given pair of numbers, how can you tell whether the least common multiple will be less than or equal to their product?

6. Jennifer has made a rectangle using 48 square tiles. If she adds the length and width of her rectangle together she gets a prime number. What is the length and width of Jennifer's rectangle? Explain your reasoning.

7. Solve each of the multiplication mazes given below. Record your solution for each maze by copying the maze on your paper and then tracing out the path through the maze.

a. Maze 924

Enter →	2	3	7	2	→ Exit
6	2	7	11
5	4	9	10

b. Maze 1080

| 2 | 8 | 6 | 3 | → Exit
---|---|---|---|---|---
Enter → | 27 | 5 | 7 | 2 |
| 2 | 5 | 2 | 9 |

c. Maze 38220

Enter →	14	39	70	91
7	2	20	60
42	15	2	2
98	26	13	7	→ Exit

d. Maze 210

| 3 | 10 | 3 | 14 |
---|---|---|---|---|
Enter → | 2 | 3 | 5 | 7 | → Exit
| 35 | 2 | 105 | 2 |
| 7 | 15 | 6 | 3 |

8. Tell whether 5,136 is divisible by 2, 3, 4, 5, 9, or 10. Write *none of these* if applicable.

9. Katie said, "The ratio of people to pets in my family is 2 to 1. For every two people we have one pet." If her family has three pets, how many people are in the family?

10. Arrange these decimals from least to greatest:

6.00 0.56 0.060 0.6 0.056

11. Samuel is getting a snack for himself and his little brother. There are two muffins in the refrigerator. Samuel takes half of one muffin for himself and gives half of the other muffin to his little brother. His little brother complains that Samuel got more. Samuel says that he got $\frac{1}{2}$ and his brother got $\frac{1}{2}$. What might be the problem?

12. Use your fraction strips or another method to compare the two fractions in each pair. Insert the correct sign: <, >, or =.

a. $\frac{8}{12} \quad \frac{3}{4}$ **b.** $\frac{5}{8} \quad \frac{6}{10}$ **c.** $\frac{2}{3} \quad \frac{5}{6}$ **d.** $\frac{2}{4} \quad \frac{7}{12}$ **e.** $\frac{3}{8} \quad \frac{3}{12}$

13. Find a fraction between each pair of fractions given.

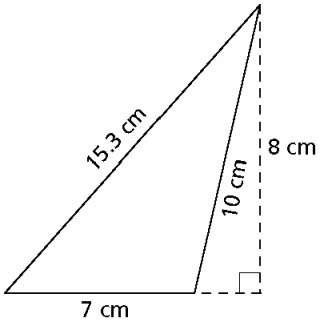
a. $\frac{4}{7}$ and $\frac{5}{7}$ **b.** $\frac{2}{3}$ and $\frac{1}{4}$ **c.** $\frac{1}{8}$ and $\frac{2}{8}$

14. Estimate each product. Then find each product. Show your work.

a. $\frac{2}{3} \times \frac{4}{5} =$ **b.** $3\frac{3}{4} \times \frac{2}{5} =$ **c.** $18(\frac{5}{6}) =$

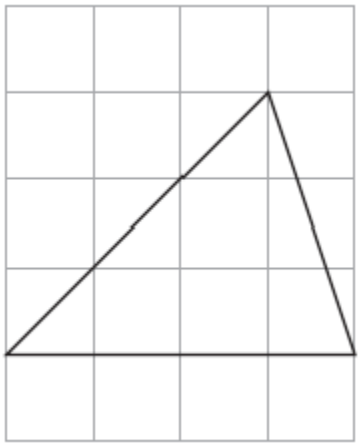
Find the area and perimeter of each figure. Show your work. (Figures are not drawn to scale.)

15.

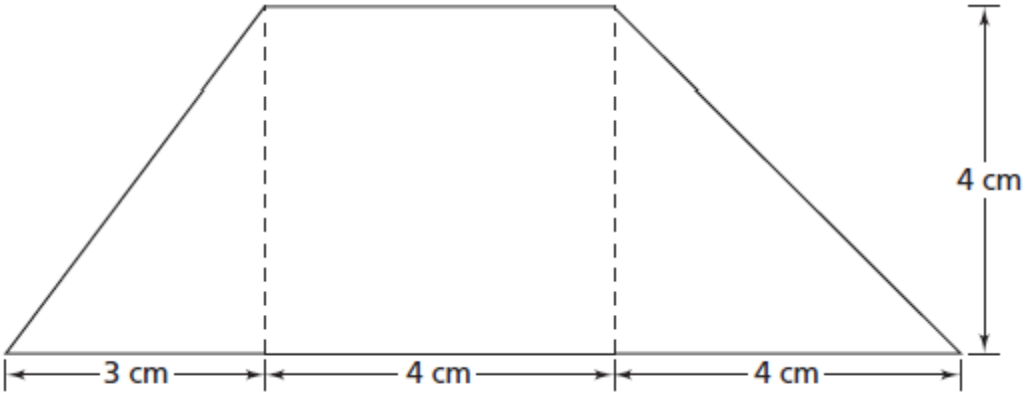


16. What is the area of each shape? Show your work. (Figures are not drawn to scale.)

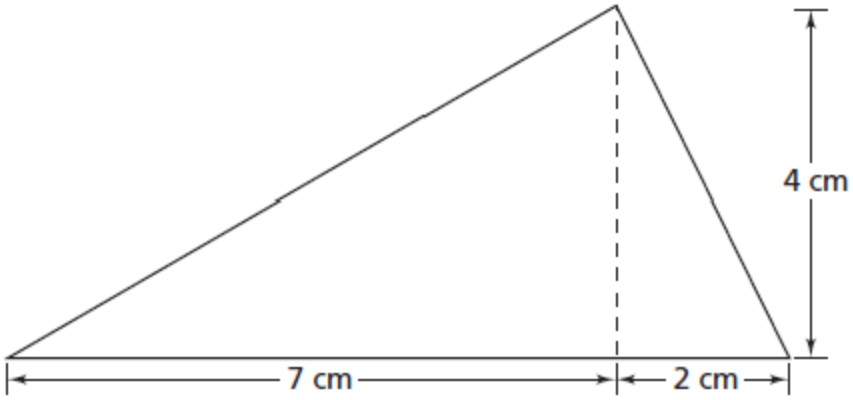
a.



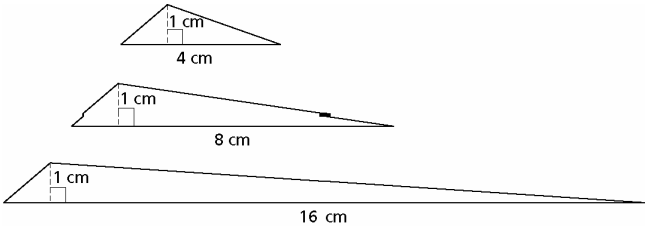
b.



c.



17. **a.** Find the area of each triangle below.



b. How are the bases of these triangles related to each other?

c. How are the areas of these triangles related to each other?

18. Marie wants to decorate a gift box with ribbon. She measures three pieces that she has with a ruler. They are 32.3 centimeters, 41.19 centimeters, and 57.8 centimeters long. She needs 200 centimeters of ribbon for the box. Does she have enough? Explain how you know.

19. For each problem, find the exact sum or difference.

a. 0.52 + 1.2 **b.** 4.4 – 1.29

20. **a.** Use fraction addition to find this sum: 1.23 + 3.9

b. Use decimals and place value to find this sum: $2\frac{4}{10} + 3\frac{7}{100}$

21. Use the decimal form of each fraction to find the solution. Show your work.

a. $\frac{5}{8} + 1\frac{1}{2}$ **b.** $2\frac{3}{4} - 1\frac{2}{16}$ **c.** $4\frac{1}{8} \times 2\frac{1}{2}$ **d.** $3\frac{3}{4} \div 1\frac{1}{4}$

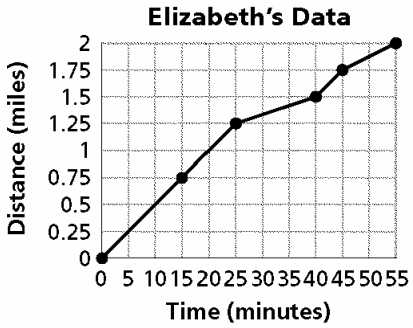
22. Which difference is greater? Explain your thinking.

a.	7.3 – 4.9	or	8.5 – 3.2
b.	25.041 – 8.3	or	31.241 – 14.5
c.	0.57 – 0.008	or	0.6 – 0.044

23. Compute each quotient. What patterns do you notice?

a.	6.3 ÷ 9,	6.3 ÷ 0.9,	6.3 ÷ 0.09,	6.3 ÷ 0.009
b.	6.3 ÷ 9,	0.63 ÷ 9,	0.063 ÷ 9,	0.0063 ÷ 9
c.	6.3 ÷ 9,	0.63 ÷ 0.9,	0.063 ÷0.09,	0.0063 ÷ 0.009

24. The graph below shows data that Elizabeth collected while walking.



a. When does she make the most progress? Explain your reasoning.

b. When does she make the least progress? Explain your reasoning.

Use the data in the table below for the following questions.

Product	Fat (g)
Cheese Pizza A	15
Cheese Pizza B	11
Cheese Pizza C	12
Cheese Pizza D	14
Cheese Pizza E	12
Cheese Pizza F	12
Cheese Pizza G	9
Cheese Pizza H	18
Cheese Pizza J	20
Cheese Pizza K	12
Cheese Pizza L	14
Cheese Pizza M	13
Cheese Pizza N	13
Cheese Pizza P	17
Cheese Pizza Q	9
Cheese Pizza R	19
Cheese Pizza S	14
Pepperoni Pizza A	18
Pepperoni Pizza B	16
Pepperoni Pizza C	22
Pepperoni Pizza D	20
Pepperoni Pizza E	23
Pepperoni Pizza F	26
Pepperoni Pizza G	25
Pepperoni Pizza H	14
Pepperoni Pizza J	6
Pepperoni Pizza K	20
Pepperoni Pizza L	20
Pepperoni Pizza M	4

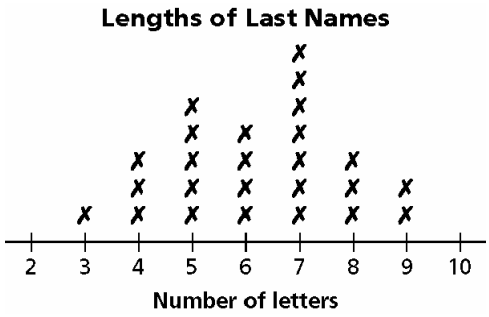
25. What is the mean of the data?

26. What is the median of the data?

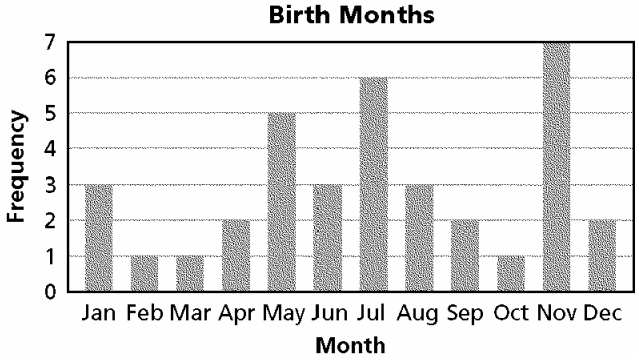
27. Suppose the pepperoni pizza with 14 grams of fat were replaced with a pizza that has 24 grams of fat. What would happen to the **mean** of the data?

28. Consider each distribution below.
    - Identify the number of people represented by the data (if possible).
    - Identify the range, mode, and median of the data.

a.



b.



Make a line plot or a bar graph of a set of name-length data that fits the description.

29. 14 names with a median of 12 letters and a range of 7 letters to 17 letters

Multiple Choice

Identify the choice that best completes the statement or answers the question.

____ 1. Test 72,238 for divisibility by 2, 5, or 10.
   A. It is divisible by 2, but not by 5 or 10.
   B. It is divisible by 5 and 10 but not by 2.
   C. It is divisible by 2, 5, and 10.
   D. It is divisible by 5, but not by 2 or 10.

Name: _____ **ID: A**

Compare the pair of numbers. Use <, =, or >.

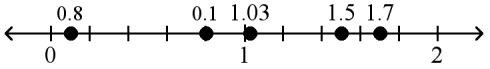
____ 2. $\frac{3}{4}$ ▩ $\frac{22}{60}$

A. $\frac{3}{4} < \frac{22}{60}$ B. $\frac{3}{4} = \frac{22}{60}$ C. $\frac{3}{4} > \frac{22}{60}$

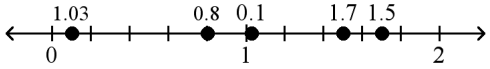
Order the set of numbers on a number line.

____ 3. 0.8, 1.5, 1.7, 1.03, 0.1

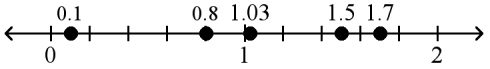
A.



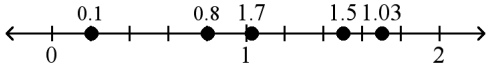
C.



B.



D.



Use a calculator, paper and pencil, or mental math to write the decimal or fraction as a percent. Round to the nearest percent.

____ 4. $\frac{3}{20}$

A. 160% B. 15% C. 25% D. 150%

Find the sum.

____ 5. $8\frac{4}{5} + 7\frac{1}{3}$

A. $12\frac{5}{12}$ B. $16\frac{2}{15}$ C. $10\frac{3}{14}$ D. $13\frac{1}{14}$

____ 6. Your puppy weighed $3\ \frac{1}{2}$ lb last week. This week he weighs $6\ \frac{1}{4}$ lb. How much weight has he gained?

A. $6\frac{1}{2}$ lb B. $9\frac{3}{4}$ lb C. $2\frac{3}{4}$ lb D. $\frac{3}{4}$ lb

Find the product. Simplify.

____ 7. $\frac{1}{5} \times \frac{4}{9}$

A. $\frac{4}{45}$ B. $\frac{45}{4}$ C. $\frac{20}{9}$ D. $\frac{9}{20}$

____ 8. You are making scarves for presents. Each scarf needs $\frac{3}{4}$ yd of fabric. How many yards of fabric do you need for 7 scarves?

A. $9\frac{1}{3}$ yd B. $5\frac{1}{4}$ yd C. $10\frac{2}{3}$ yd D. 6 yd

____ 9. Find the perimeter of the rectangle with length 97 inches and width 17 inches.

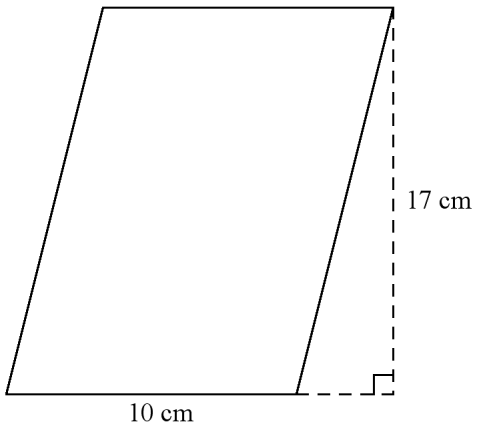
A. 228 in. B. 211 in. C. 1,649 in. D. 114 in.

Find the area of a parallelogram with base *b* and height *h*.

____ 10. $b = 95$ cm
$h = 9.6$ cm

A. 456 cm^2 C. 92.16 cm^2
B. 912 cm^2 D. 9,025 cm^2

____ 11. Find the area of the parallelogram.



Not drawn to scale

A. 54 cm^2 B. 85 cm^2 C. 170 cm^2 D. 27 cm^2

Use >, =, or < to complete the statement.

____ 12. 0.66 ▩ 0.37

A. = B. < C. >

____ 13. 7.80 ▩ 7.8
A. > B. < C. =

____ 14. Manny has $75.59 in his savings account. He takes out $12.15. How much money does he have left in the account?
A. $63.45 B. $63.44 C. $85.72 D. $87.74

Find the quotient.

____ 15. 304 ÷ 20
A. 324 B. 15.2 C. 325.5 D. 16.7

____ 16. A lawn trimmer is on sale for 45% off. The sale price is $195.25. What was the original price?
A. $365 B. $240.25 C. $370 D. $355

____ 17. Find the measure of the central angle that you would need to draw to represent 86% in a circle graph. Round to the nearest degree if necessary.
A. 31° B. 292° C. 310° D. 328°

____ 18. Ms. Farquand recorded the number of sick days taken last year by each of her employees, as shown in the table.

Employee	Number of Sick Days
Earl	0
Chantal	3
Sarita	4
Ryan	2
Simone	7
Davin	6
Javier	8
Marty	4
Martina	3

Find the mean number of days employees were sick. If necessary, round your answer to the nearest hundredth.

A. 4.11 B. 2.67 C. 3.78 D. 3.33

Find the median of the data set.

____ 19. $\frac{1}{2}, \frac{1}{8}, \frac{5}{6}, \frac{3}{10}, \frac{7}{12}$

A. $\frac{3}{10}$ B. $\frac{1}{8}$ C. $\frac{1}{2}$ D. $\frac{5}{6}$

____ 20. Mike was in charge of collecting contributions for the Food Bank. He received contributions of $13, $34, $26, $31, and $28 from five co-workers. Find the median value of these contributions.

A. $31 B. $28 C. $26 D. $30

6th grade summer packet
Answer Section

SHORT ANSWER

1. ANS:
Jill is incorrect. In order for 6 to be a common factor, both numbers must be divisible by 6. You cannot divide the number 56 by 6 without getting a remainder. $36 \div 6 = 6$, $56 \div 6 = 9\frac{1}{3}$.

PTS: 1 DIF: L2 REF: Prime Time | Partner Quiz
OBJ: Investigation 2: Common Multiples and Common Factors
NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.NS.B.4 TOP: Problem 2.1 Finding Patterns
KEY: factor pair | rectangular model | dimensions

2. ANS:
24 seconds

PTS: 1 DIF: L2 REF: Prime Time | Unit Test
OBJ: Investigation 2: Common Multiples and Common Factors
NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.NS.B.4 TOP: Problem 2.2
KEY: common multiples | least common multiple | common factors | greatest common factor

3. ANS:
Answers will vary.

PTS: 1 DIF: L2 REF: Prime Time | Extra Questions
OBJ: Investigation 2: Common Multiples and Common Factors
NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.NS.B.4 TOP: Problem 2.1 Finding Patterns
KEY: factor pair | rectangular model | dimensions

4. ANS:
a. 6
b. 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, and 96

PTS: 1 DIF: L2 REF: Prime Time | Extra Questions
OBJ: Investigation 2: Common Multiples and Common Factors
NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.NS.B.4 TOP: Problem 2.1 Finding Patterns
KEY: factor pair | rectangular model | dimensions | factor | multiple

5. ANS:
   a. Any two numbers that do not share a common factor (relatively prime numbers) will work. Examples are 3 and 4, 11 and 12, 15 and 8.
   b. Any two numbers that share a common factor will work. Examples are 15 and 9, 10 and 25, 18 and 48, 45 and 8l.
   c. If the numbers do not have a common factor, their least common multiple will be equal to their product. If the numbers have a common factor, their least common multiple will be less than their product.

   PTS: 1 DIF: L2 REF: Prime Time | Extra Questions
   OBJ: Investigation 2: Common Multiples and Common Factors
   NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.NS.B.4
   TOP: Problem 3.2 Finding Least Common Multiple KEY: least common multiple | multiple
6. ANS:
   The dimensions are 3 × 16. The possible dimensions are 1 × 48, 2 × 24, 3 × 16, 4 × 14, and 6 × 8. Only the 3 × 16 rectangle has dimensions with a sum that is a prime number.

   PTS: 1 DIF: L2 REF: Prime Time | AP Investigation 1
   OBJ: Investigation 1: Building on Factors and Multiples
   NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.EE.A.3 TOP: Problem 2.1 Finding Patterns
   KEY: factor pair | rectangular model | dimensions | prime number | factor
7. ANS:
   a. Maze 924

Enter →	2	3	7	2
	6	2	7	11 → Exit
	5	4	9	10

   b. Maze 1,080

	2	8	6	3 → Exit
	27	5	7	2
Enter →	2	5	2	9

   c. Maze 38,220

	14	39	70	91
Enter →	7	2	20	60
	42	15	2	2
	98	26	13	7 → Exit

   d. Maze 210

	3	10	3	14
Enter →	2	3	5	7 → Exit
	35	2	105	2
	7	15	6	3

   PTS: 1 DIF: L2 REF: Prime Time | AP Investigation 4
   OBJ: Investigation 3: Factorizations: Searching for Factor Strings
   NAT: CC 6.EE.A.1 | CC 6.EE.A.2b TOP: Problem 4.2 Finding the Longest Factor String
   KEY: factor tree | exponent | Fundamental Theorem of Arithmetic
8. ANS:
   2, 3, 4

   PTS: 1 DIF: L2 REF: Skills Practice Investigation 1
   OBJ: Investigation 1: Building on Factors and Multiples
   NAT: CC 6.EE.A.2a | CC 6.EE.A.2b | CC 6.EE.A.3
   TOP: Problem 1.2 Prime and Composite Numbers
   KEY: divisible | divisibility test | composite number | prime number

9. ANS:
6 people

PTS: 1 DIF: L2 REF: Comparing Bits and Pieces | Check-Up 2
OBJ: Investigation 2: Connecting Ratios and Rates
NAT: CC 6.RP.A.1| CC 6.RP.A.2| CC 6.RP.A.3| CC 6.RP.A.3b| CC 6.NS.B.4

10. ANS:
0.056, 0.060, 0.56, 0.6, 6.00

PTS: 1 DIF: L2 REF: Comparing Bits and Pieces | Unit Test
OBJ: Investigation 3: Extending the Number Line
NAT: CC 6.RP.A.3| CC 6.NS.B.2| CC 6.NS.C.6| CC 6.NS.C.7| CC 6.NS.C.7a| NAEP N1i| NAEP N1j| NAEP N2b STA: 6NY 6.N.14 | 6NY 6.N.20 | 6NY 6.N.21
TOP: Problem 3.4 KEY: decimals | ordering decimals

11. ANS:
The muffins may not have been the same size to start with.

PTS: 1 DIF: L2 REF: Bits and Pieces I | Question Bank
OBJ: Investigation 2: Comparing Ratios and Rates
NAT: CC 6.NS.C.6| CC 6.NS.C.7| CC 6.NS.C.7a| NAEP N1j| NAEP N2a| NAEP N3a
STA: 6NY 6.N.14 | 6NY 6.N.21 TOP: Problem 2.1 Equivalent Fractions and Equal Shares
KEY: equivalent fractions | equal shares

12. ANS:
a. $\frac{8}{12} < \frac{3}{4}$
b. $\frac{5}{8} > \frac{6}{10}$
c. $\frac{2}{3} < \frac{5}{6}$
d. $\frac{2}{4} < \frac{7}{12}$
e. $\frac{3}{8} > \frac{3}{12}$

PTS: 1 DIF: L2 REF: Bits and Pieces I | Question Bank
OBJ: Investigation 2: Connecting Ratios and Rates
NAT: CC 6.NS.C.6| CC 6.NS.C.7| CC 6.NS.C.7a| NAEP N1j| NAEP N2a| NAEP N3a
STA: 6NY 6.N.14 | 6NY 6.N.21 TOP: Problem 2.3 Comparing Fractions to Benchmarks
KEY: benchmark

13. ANS:

a. $\frac{9}{14}$

b. $\frac{7}{24}$

c. $\frac{3}{16}$

PTS: 1 DIF: L2 REF: Bits and Pieces I | Additional Practice Investigation 3
OBJ: Investigation 3: Extending the Number Line
NAT: CC 6.NS.C.5| CC 6.NS.C.6| CC 6.NS.C.6a| CC 6.NS.C.6c| CC 6.NS.C.7| CC 6.NS.C.7a| CC 6.NS.C.7b| CC 6.NS.C.7c| CC 6.NS.C.7d| CC 6.RP.A.1| CC 6.RP.A.3| CC 6.NS.B.3| CC 6.NS.B.4
STA: 6NY 6.N.14 | 6NY 6.N.21 KEY: fractions between fractions | comparing fractions

14. ANS:

a. $\frac{8}{15}$

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

c. 15

PTS: 1 DIF: L2 REF: Let's Be Rational | Check-Up 2
OBJ: Investigation 2: Building on Multiplication With Fractions
NAT: CC 6.NS.B.3 | CC 6.NS.B.4

15. ANS:

area = 28 cm^2, perimeter = 32.3 cm

PTS: 1 DIF: L2 REF: Covering and Surrounding | Unit Test
OBJ: Investigation 2: Measuring Triangles
NAT: CC 6.G.A.1| NAEP G5a| NAEP M2a| NAEP M1h| NAEP M2a| NAEP M2d| NAEP G3f| NAEP M1h| NAEP M2b| NAEP M2f| NAEP M2a| NAEP M2d| NAEP G3f
STA: 6NY 6.G.2| 6NY 6.G.3| 6NY 6.G.3 TOP: Problem 2.2
KEY: base | height | area | perimeter | area of a triangle

16. ANS:

a. base = 4 units, height = 3 units, area = 6 square units

b. left triangle: base = 3 cm, height = 4 cm, area = 6 cm^2
square: base = 4 cm, area = 16 cm^2
right triangle: base = 4 cm, height = 4 cm, area = 8 cm^2
area of shape = 6 cm^2 + 16 cm^2 + 8 cm^2 = 30 cm^2

c. base = 9 cm, height = 4 cm, area = 18 cm^2

PTS: 1 DIF: L2 REF: Covering and Surrounding | Check-Up 2
OBJ: Investigation 2: Measuring Triangles
NAT: CC 6.EE.A.2| CC 6.EE.A.2a| CC 6.EE.A.2c| CC 6.EE.B.6| CC 6.G.A.1

17. ANS:
a. 2 cm^2, 4 cm^2 and 8 cm^2
b. The base of each triangle is 2 times the base of the next smaller triangle.
c. The area of each triangle is 2 times the area of the next smaller triangle.

PTS: 1 DIF: L2
REF: Covering and Surrounding | Additional Practice Investigation 3
OBJ: Investigation 2: Measuring Triangles
NAT: CC 6.G.A.1| NAEP G5a| NAEP M2a| NAEP M1h| NAEP M2a| NAEP M2d| NAEP G3f| NAEP M1h| NAEP M2b| NAEP M2f| NAEP M2a| NAEP M2d| NAEP G3f
STA: 6NY 6.G.2| 6NY 6.G.3| 6NY 6.G.3
TOP: Problem 3.3 Changing the Base and Height KEY: area of a triangle | area

18. ANS:
She does not have enough. She has about $32 + 41 + 58$, which is about 131 centimeters. She needs more than 60 more centimeters of ribbon.

PTS: 1 DIF: L2 REF: Decimal Ops | Check Up 1
OBJ: Investigation 1: Decimal Operations and Estimation
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27 TOP: Problem 1.2 Adding and Subtracting Decimals
KEY: add decimals | word problem | comparing decimals

19. ANS:
a. 1.72
b. 3.11

PTS: 1 DIF: L2 REF: Decimal Ops | Check Up 2
OBJ: Investigation 2: Adding and Subtracting Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a | NAEP N3d | NAEP N3f

20. ANS:
a. $1\frac{23}{100} + 3\frac{9}{10} = 1\frac{23}{100} + 3\frac{90}{100} = 4\frac{113}{100} = 5\frac{13}{100} = 5.13$

b. $2.4 + 3.07 = 5.47$

PTS: 1 DIF: L2 REF: Decimal Ops | Question Bank
OBJ: Investigation 2: Adding and Subtracting Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27
TOP: Problem 1.3 Using Fractions to Add and Subtract Decimals
KEY: add decimals | fraction addition | place value | addition

21. ANS:
a. $0.625 + 1.5 = 2.125$

b. $2.75 - 1.125 = 1.625$

c. $4.125 \times 2.5 = 10.3125$

d. $3.75 \div 1.25 = 3$

PTS: 1 DIF: L2 REF: Decimal Ops | Question Bank
OBJ: Investigation 1: Decimal Operations and Estimation | Investigation 2: Adding and Subtracting Decimals | Investigation 3: Multiplying and Dividing Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.2 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a | NAEP N3d | NAEP N3f
STA: 6NY 6.N.4 | 6NY 6.N.16 | 6NY 6.N.27 | 6NY 6.S.5
TOP: Problem 1.3 Using Fractions to Add and Subtract Decimals | Problem 2.1 Relating Fraction and Decimal Multiplication | Problem 3.1 Relating Fraction and Decimal Division
KEY: add decimals | divide decimals | multiply decimals | subtract decimals

22. ANS:
a. 8.5 – 3.2; If you use benchmarks to estimate, 8.5 – 3 is a greater difference than 7 – 5.

b. They are the same.

c. 0.57 – 0.008; Students probably have to compute the two differences.

PTS: 1 DIF: L2 REF: Decimal Ops | Additional Practice Investigation 1
OBJ: Investigation 1: Decimal Operations and Estimation
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27 TOP: Problem 1.2 Adding and Subtracting Decimals
KEY: subtract decimals | estimate | benchmarks

23. ANS:
a. 0.7 7, 70, 700; the quotient is multiplied by ten each time the divisor is divided by ten

b. 0.7, 0.07, 0.007, 0.0007; the quotient is divided by ten each time the dividend is divided by ten

c. 0.7, 0.7, 0.7, 0.7; the quotients are the same since the dividend and the divisor are each divided by ten each time

PTS: 1 DIF: L2 REF: Decimal Ops | Additional Practice Investigation 3
OBJ: Investigation 3: Multiplying and Dividing Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.2 | CC 6.NS.3 | NAEP M2b | NAEP N2b | NAEP N3a | NAEP N3d | NAEP N3f STA: 6NY 6.N.4 | 6NY 6.N.16 | 6NY 6.N.27 | 6NY 6.S.5
TOP: Problem 3.3 Exploring Dividing Decimals KEY: divide decimals | powers of ten

24. ANS:
a. Elizabeth makes the most progress at two different times-in the first 25 minutes and from 40 to 45 minutes. This progress is shown on the graph by the steepest inclines.

b. She makes the least progress from 25 to 40 minutes. This is shown by the flattest incline.

PTS: 1 DIF: L2 REF: Variables and Patterns | Question Bank
OBJ: Investigation 2: Analyzing Relationships Among Variables
NAT: CC 6.EE.B.6 | CC 6.EE.C.9 | CC 6.NS.C.8 | NAEP A2b | NAEP A3a
STA: 7NY 7.A.7 | 7NY 7.A.8 | 7NY 7.S.3 | 7NY 7.S.6 | 7NY 7.S.8
TOP: Problem 2.2 Making and Analyzing a Graph
KEY: table | coordinate graph | variable | scale

25. ANS:
mean: 13.76
(234/17)

PTS: 1 DIF: L2 REF: Data About Us | Partner Quiz
OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5

26. ANS:
median: 13

PTS: 1 DIF: L2 REF: Data About Us | Partner Quiz
OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5

27. ANS:
The mean would increase. It was 214/12 = 17.83; now it would be 224/12 = 18.67.

PTS: 1 DIF: L2 REF: Data About Us | Partner Quiz
OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5

28. ANS:
a. There are 25 people represented. The mode is 7. The median is 6. The range is 6.

b. There are 36 people represented. The mode is November. The median and range are not appropriate statistics to describe categorical data.

PTS: 1 DIF: L2 REF: Data About Us | Check Up 1
OBJ: Investigation 1: Organizing, Representing, and Describing Data
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5.a | CC 6.SP.5.b | NAEP D1a | NAEP D1b | NAEP D1c | NAEP D1d | NAEP D1e | NAEP D2a | NAEP D2b | NAEP D2c | NAEP D2d
STA: 6NY 6.S.5 | 6NY 6.S.7
TOP: Problem 1.2 Identifying the Mode Median Range and Spread
KEY: mode | range | median | spread

29. ANS:
Answers will vary. The median is 12, so 7 values need to be 12 or less (down to 7) and 7 values need to be 12 or greater (up to 17).

PTS: 1 DIF: L2 REF: Data About Us | Additional Practice Investigation 1
OBJ: Investigation 1: Organizing, Representing, and Describing Data
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5.a | CC 6.SP.5.b | NAEP D1a | NAEP D1b | NAEP D1c | NAEP D1d | NAEP D1e | NAEP D2a | NAEP D2b | NAEP D2c | NAEP D2d
STA: 6NY 6.S.5 | 6NY 6.S.7 TOP: Problem 1.4 Using Different Data Types
KEY: categorical data | numerical data | line plot | bar graph | median | range

MULTIPLE CHOICE

1. ANS: A PTS: 1 DIF: L1 REF: Skills Practice Investigation 1
OBJ: Investigation 1: Building on Factors and Multiples
NAT: CC 6.EE.A.1 | CC 6.EE.A.2b | NAEP N5b | NAEP N5d
TOP: Problem 1.2 Prime and Composite Numbers
KEY: divisible | divisibility test | factor | composite number | prime number
2. ANS: C PTS: 1 DIF: L1
REF: Bits and Pieces I | Skills Practice Investigation 2
OBJ: Investigation 2: Connecting Ratios and Rates
NAT: CC 6.NS.C.6| CC 6.NS.C.7| CC 6.NS.C.7a| NAEP N1j| NAEP N2a| NAEP N3a
STA: 6NY 6.N.14 | 6NY 6.N.21 TOP: Problem 2.2 Finding Equivalent Fractions
KEY: fraction | equivalent fractions | comparing fractions
3. ANS: B PTS: 1 DIF: L1
REF: Bits and Pieces I | Skills Practice Investigation 3
OBJ: Investigation 3: Extending the Number Line
NAT: CC 6.RP.A.3| CC 6.NS.B.2| CC 6.NS.C.6| CC 6.NS.C.7| CC 6.NS.C.7a| NAEP N1i| NAEP N1j| NAEP N2b STA: 6NY 6.N.14 | 6NY 6.N.20 | 6NY 6.N.21
TOP: Problem 3.5 Ordering Decimals
KEY: comparing decimals | ordering decimals | number line | decimals
4. ANS: B PTS: 1 DIF: L1
REF: Bits and Pieces I | Skills Practice Investigation 4
OBJ: Investigation 4: Working With Percents
NAT: CC 6.RP.A.1| CC 6.RP.A.3| CC 6.RP.A.3a| CC 6.RP.A.3b| CC 6.NS.C.6| CC 6.NS.C.7a| NAEP N1d| NAEP N1i| NAEP N4b STA: 6NY 6.N.27
TOP: Problem 4.2 Using Percents to Compare | Problem 4.4 Moving Between Representations
KEY: percents fractions and decimals | writing decimals and fractions as percents | percent | fraction | decimals
5. ANS: B PTS: 1 DIF: L1 REF: Skills Practice Investigation 2
OBJ: Investigation 1: Extending Addition and Subtraction of Fractions
NAT: CC 6.EE.A.2b | CC 6.EE.B.5 | CC 6.NS.C.6 | NAEP N3a | NAEP N3f | NAEP N5e
STA: 6NY 6.G.3 | 6NY 6.N.16
TOP: Problem 2.2 Visiting the Spice Shop: Using Addition and Subtraction | Problem 2.3 Just the Facts
KEY: adding mixed numbers | adding mixed numbers with unlike denominators | mixed number

6. ANS: C PTS: 1 DIF: L1 REF: Skills Practice Investigation 2
   OBJ: Investigation 1: Extending Addition and Subtraction of Fractions
   NAT: CC 6.EE.A.2b | CC 6.EE.B.5 | CC 6.NS.C.6 | NAEP N3a | NAEP N3f | NAEP N5e
   STA: 6NY 6.G.3 | 6NY 6.N.16
   TOP: Problem 2.2 Visiting the Spice Shop: Using Addition and Subtraction | Problem 2.3 Just the Facts
   KEY: mixed number | subtracting mixed numbers | problem solving | word problem
7. ANS: A PTS: 1 DIF: L1 REF: Skills Practice Investigation 3
   OBJ: Investigation 2: Building on Multiplication With Fractions
   NAT: CC 6.EE.A.2b | CC 6.EE.B.5 | CC 6.NS.C.6 | CC 6.NS.C.6c | NAEP N1b | NAEP N3a | NAEP N5e
   STA: 6NY 6.N.17 | 6NY 6.N.18 TOP: Problem 3.2 Finding a Part of a Part
   KEY: fraction | multiplying fractions
8. ANS: B PTS: 1 DIF: L1 REF: Skills Practice Investigation 3
   OBJ: Investigation 2: Building on Multiplication With Fractions
   NAT: CC 6.EE.A.2b | CC 6.EE.B.5 | CC 6.NS.C.6 | CC 6.NS.C.6c | NAEP N1b | NAEP N3a | NAEP N5e
   STA: 6NY 6.N.17 | 6NY 6.N.18
   TOP: Problem 3.3 Modeling More Multiplication Situations | Problem 3.4 Changing Forms
   KEY: fraction | multiplying fractions | multiplying fractions by whole numbers | problem solving | word problem
9. ANS: A PTS: 1 DIF: L1
   REF: Covering and Surrounding | Skills Practice Investigation 1
   OBJ: Investigation 1: Designing Bumper Cars
   NAT: CC 6.G.A.1| NAEP M1h| NAEP M2b| NAEP M2f STA: 6NY 6.G.3
   TOP: Problem 1.2 Finding Area and Perimeter of Rectangles KEY: perimeter | rectangle
10. ANS: B PTS: 1 DIF: L2
    REF: Covering and Surrounding | Skills Practice Investigation 1
    OBJ: Investigation 1: Designing Bumper Cars
    NAT: CC 6.G.A.1| NAEP M1h| NAEP M2b| NAEP M2f STA: 6NY 6.G.3
    TOP: Problem 1.3 Formulas for Area and Perimeter
    KEY: area | base | height | parallelogram | geometry
11. ANS: C PTS: 1 DIF: L1
    REF: Covering and Surrounding | Skills Practice Investigation 1
    OBJ: Investigation 1: Designing Bumper Cars
    NAT: CC 6.G.A.1| NAEP M1h| NAEP M2b| NAEP M2f STA: 6NY 6.G.3
    TOP: Problem 1.3 Formulas for Area and Perimeter KEY: area | parallelogram | base | height
12. ANS: C PTS: 1 DIF: L1
    REF: Decimal Ops | Skills Practice Investigation 1
    OBJ: Investigation 1: Decimal Operations and Estimation
    NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27 TOP: Problem 1.1 Estimating With Decimals
    KEY: comparing decimals | place value | decimals
13. ANS: C PTS: 1 DIF: L1
    REF: Decimal Ops | Skills Practice Investigation 1
    OBJ: Investigation 1: Decimal Operations and Estimation
    NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27 TOP: Problem 1.1 Estimating With Decimals
    KEY: comparing decimals | decimals | place value

14. ANS: B PTS: 1 DIF: L1
REF: Decimal Ops | Skills Practice Investigation 2
OBJ: Investigation 2: Adding and Subtracting Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.3 | CC 6.NS.6 | CC 6.NS.6.c | NAEP M2b | NAEP N2b | NAEP N3a STA: 6NY 6.N.27 TOP: Problem 1.2 Adding and Subtracting Decimals
KEY: word problem | problem solving | estimation | subtracting decimals | subtracting decimals from decimals | decimals
15. ANS: B PTS: 1 DIF: L1
REF: Decimal Ops | Skills Practice Investigation 3
OBJ: Investigation 3: Multiplying and Dividing Decimals
NAT: CC 6.EE.2.b | CC 6.EE.5 | CC 6.NS.2 | CC 6.NS.3 | NAEP M2b | NAEP N2b | NAEP N3a | NAEP N3d | NAEP N3f STA: 6NY 6.N.4 | 6NY 6.N.16 | 6NY 6.N.27 | 6NY 6.S.5
TOP: Problem 3.3 Exploring Dividing Decimals
KEY: dividing by whole numbers | dividing decimals by whole numbers | dividing decimals
16. ANS: D PTS: 1 DIF: L2
REF: Decimal Ops | Skills Practice Investigation 4 OBJ: Investigation 4: Using Percents
NAT: CC 6.NS.6 | CC 6.RP.3.c | NAEP N3a | NAEP N3g | NAEP N4d
STA: 6NY 6.N.12 TOP: Problem 4.1 Determining Tax
KEY: write an equation | solving problems by writing equations | problem solving | algebra | word problem | determining tax
17. ANS: C PTS: 1 DIF: L1
REF: Decimal Ops | Skills Practice Investigation 4 OBJ: Investigation 4: Using Percents
NAT: CC 6.RP.3.c | NAEP D1b | NAEP N3g | NAEP N4d STA: 6NY 6.N.12 | 6NY 6.N.26
TOP: Problem 5.3 Making Circle Graphs
KEY: circle graph | percents | proportion | central angle
18. ANS: A PTS: 1 DIF: L2
REF: Data About Us | Skills Practice Investigation 3 OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5.c | CC 6.SP.5.d | NAEP D1a | NAEP D1c | NAEP D2a | NAEP D2b | NAEP D2c | NAEP D2d STA: 6NY 6.S.5 | 6NY 6.S.7
TOP: Problem 3.1 Finding the Mean KEY: mean | word problem
19. ANS: C PTS: 1 DIF: L2
REF: Data About Us | Skills Practice Investigation 3 OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5.c | CC 6.SP.5.d | NAEP D1a | NAEP D1c | NAEP D2a | NAEP D2b | NAEP D2c | NAEP D2d STA: 6NY 6.S.5 | 6NY 6.S.7
TOP: Problem 3.1 Finding the Mean KEY: median | fraction
20. ANS: B PTS: 1 DIF: L1
REF: Data About Us | Skills Practice Investigation 3 OBJ: Investigation 2: Using the Mean
NAT: CC 6.SP.1 | CC 6.SP.2 | CC 6.SP.3 | CC 6.SP.4 | CC 6.SP.5.c | CC 6.SP.5.d | NAEP D1a | NAEP D1c | NAEP D2a | NAEP D2b | NAEP D2c | NAEP D2d STA: 6NY 6.S.5 | 6NY 6.S.7
TOP: Problem 3.1 Finding the Mean KEY: median | word problem