1. Which answer choice best describes an exponent? (Circle the correct letter.)
A. It is a number with 2 factors.
B. It is a number that is to be multiplied by the base number.
C. It is a number that tells how many equal factors there are.
D. It is a common factor to both numbers involved.
2. Create a factor tree showing the prime factorization for the number 72 . Write and circle your final answer using exponents.

3. Circle the greater of the two fractions below. How can you tell that it's greater?

$$
\frac{4}{16} \quad \frac{4}{8}
$$

Explain: $\qquad$
$\qquad$
$\qquad$
2. Shade the model to show the mixed number $3 \frac{5}{6}$.



$\qquad$

1. Ellia and Cody are playing a math game. When Ellia lays down her fraction cards, Cody must lay down decimal cards that show the correct decimal equivalents for the fractions. If Cody did this correctly, which sequence below shows the correct order of the decimals in relation to the fraction cards? (Circle the correct letter.)
A. $2.5,0.75,0.25,0.20$
B. 2.5, $0.75,0.20,0.25$
C. $0.20,0.25,0.75,2.5$

| $\frac{1}{5}$ | $\frac{1}{4}$ |
| :---: | :---: |$\frac{3}{4}$

D. $0.20,0.25,2.5,0.75$
2. Jamison has 5 green hair ribbons and 6 blue hair ribbons in a box on her dresser. What is the ratio of the number of blue hair ribbons to the total number of green and blue hair ribbons?


1. The problem below is one that Lee wrote on the board. Which answer choice solves Lee's problem? (Circle the correct letter.)

A. 1,587,039
B. $2,392,643$
C. $3,968,933$
D. $5,998,777$
2. If each square represents 1 inch on each side, what is the area of the shaded region?


The area of the shaded region is $\qquad$ square inches.


1. Fernando wrote the least common multiple of 6 and 8 on a piece of paper. He asked Charles if he could do the same. If Charles did the problem correctly, what answer did Charles give Fernando? (Show your work and circle your final answer.)
2. Jared is helping Mr. Mann feed his goats. Of the 90 goats on the farm, 36 of the goats are solid white. What percent of the goats on the farm are solid white? (Show your work and circle your final answer.)

3. Which is true about prime numbers? (Circle the correct letter.)
A. A prime number has more than 1 and itself as a factor.
B. A prime number has no factors.
C. A prime number has only 1 and itself as factors.
D. All prime numbers have 1, itself, and the number 4 as factors.
4. Which list shows the number in order from least to greatest? (Circle the correct letter.)
A. $850,230,298$
750,839,792
550,120,673
450,742,903
B. $405,742,903$
550,120,673
750,839,792
850,230,298
C. $450,742,903$
850,230,298
750,839,792
550,120,673
D. $750,839,792$
550,120,673
850,230,298
450,742,903
Pame $\qquad$ Date $\qquad$
5. Place the numbers $1,2,3,4,7,8$ and 9 in the boxes below by following the clues.


- The number is an odd number.
- The 1 has the greatest value.
- The 2 is in the hundreds place.
- The 4 is in the thousands place.
- The 9 has a greater place value than the 7 .

2. Moses is trying to find the least common multiple of 6 and 8 . When he couldn't find the answer, he asked Beth to help him. If Beth gave him the correct answer, what answer did Beth give? (Circle the correct letter.)
A. 12
B. 16
C. 24
D. 18

3. Place the numbers $1,2,5,6$, and 7 in the boxes below by following the clues.


- The number in the ten thousands place is 1 .
- The number is an even number.
- The 2 is in the thousands place.
- The 7 has a larger value than the 5 .

2. Tammy is ordering cups for her store. The ratio of small cups to large cups she has in the store is 12 to 10. If there are 40 large cups, how many small cups does Tammy have in stock? (Show your work and circle your final answer.)

## $\left.\begin{array}{c}\text { Numbers and } \\ \text { Numeration }\end{array}\right)$ Answer Key

## Warm-Up 1

1. $80 \% \mathrm{~A} ; 20 \% \mathrm{~B}$
2. 27 fish

## Warm-Up 2

1. A. $>$
B. $=$
C. $<$
2. You should multiply 120 by 0.90 .
Warm-Up 3
3. 28
4. B

## Warm-Up 4

1. $3 \frac{1}{4}$ inches
2. $\frac{5}{6}$ of the tickets

## Warm-Up 5

1. C
2. $2^{3} \times 3^{2}$; Possible factor tree:


Warm-Up 6

1. $\frac{4}{8}$ is greater, after reducing, $\frac{4}{16}$ becomes $\frac{1}{4}$ and $\frac{4}{8}$ becomes $\frac{1}{2}$. $\frac{1}{2}$ is greater than $\frac{1}{4}$.
2. 



Warm-Up 7

1. D
2. D

Warm-Up 8

1. C
2. C

Warm-Up 9

1. 0.6
2. $4 \frac{1}{4}$ feet

Warm-Up 10

1. A 2. C

Warm-Up 11

1. C 2. B

Warm-Up 12

1. 668 decorations
2. 45 flowers

## Warm-Up 13

1. B
2. $\frac{6}{8}$

Warm-Up 14

1. $\frac{1}{4}, \frac{2}{6}, \frac{1}{2}, \frac{2}{3}, \frac{3}{4}$
2. 24.5

Warm-Up 15

1. C
2. $6: 11$

Warm-Up 16

1. A
2. 6 square inches

Warm-Up 17

1. The integer +2 is greater.

2. Henry has 12 cards left.
Deron has 3 cards left.

## Warm-Up 18

1. C
2. 60 baseball cards

Warm-Up 19

1. 80 cars
2. B

Warm-Up 20

1. B
2. D

Warm-Up 21

1. Maci: 400,700

Ty: 401,900

Warm-Up 22

1. A. $590,385,902$
B. 863,484
C. $360,484,900$
2. $\frac{2}{3}$

## Warm-Up 23

1. $\frac{54}{135}=\frac{2 \times 3 \times 3 \times 3}{3 \times 3 \times 3 \times 5}=\frac{2}{5}$
2. $\frac{3}{4}, \frac{1}{2}, \frac{2}{5}, 0.25,0.2$

## Warm-Up 24

1. B
2. A

Warm-Up 25

1. 24
2. $40 \%$

Warm-Up 26

1. C
2. B

Warm-Up 27

1. D
2. $30 \%$

Warm-Up 28

1. B
2. 24 gallons

Warm-Up 29

1. 0.2
2. $2^{4} \times 3 \times 5$

## Warm-Up 30

1. 480 seashells
2. 0.66

Warm-Up 31

1. $\frac{1}{4}, \frac{5}{8}, \frac{2}{3}, \frac{3}{4}$
2. $75 \%$

Warm-Up 32

1. A. 12
B. 9
C. 2
D. 5
2. D

## Warm-Up 33

1. Hank would have the larger number. The 6 he now has in the ten millions place is larger than the 5 Hannah has in the ten millions place.
2. $1,2,3,4,6,9,12,18,36$

Warm-Up 34

1. $2 \frac{1}{2}, 1 \frac{1}{4}, 1,0,-2$
2. A. -3
B. -5

Warm-Up 35

1. 5,000
2. A. 160 stuffed animals
B. cost and weight

Warm-Up 36

1. B
2. C

Warm-Up 37

1. A
2. $80 \%$

Warm-Up 38

1. D
2. 0

## Warm-Up 39

1. Yes. There is just enough for every student to have exactly 1 bottle of water.
2. $2^{3} \times 3^{2} \times 5$

Warm-Up 40

1. 12
2. 16 blocks

Warm-Up 41

1. C; $75 \%$
2. $\frac{3}{4}, \frac{2}{3}, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}$

Warm-Up 42

1. Hans
2. 56

Warm-Up 43
1.

| Date | Number of Pennies |
| :---: | :---: |
| 1930 | 30 |
| 1920 | 30 |
| 1910 | 60 |

2. C

Warm-Up 44

1. D

Warm-Up 45

1. $40 \%$
2. $85 \%$

Warm-Up 46

1. $\$ 8.00$
2. 6.6

## Warm-Up 47

1. 69.3

2. 60 questions; $\frac{3}{5}$

Warm-Up 48

1. A. 0.30
I. 4.5
B. 2.136
J. 3.06
C. 0.3
K. 2.00
D. 0.2
L. 0.85
E. 2.0
M. 4.1
F. 5.3
N. 5.65
G. 15.96
O. 6.2
H. 1.50
2. $\$ 67.26$

Warm-Up 49

1. $1,984,273$
2. C

Warm-Up 50

1. 12,756
2. 48 small cups

## Warm-Up 51

1. D
2. $\$ 179.94$;One hundred seventy-nine dollars and 94 cents
Warm-Up 52

$$
\text { 1. } 2^{4} \times 3 \quad 2 . B
$$

## Warm-Up 53

1. 15 stuffed animals
2. $5 \%$

Warm-Up 54

1. $24 \%$
2. $40 \%$

Warm-Up 55

1. D
2. $5: 6$

Warm-Up 56

1. $2^{3} \times 5 \times 11$
2. 28 left

Warm-Up 57

1. $\$ 1,160.20$
2. 4,410 miles

## Warm-Up 58

1. D 2. A

Warm-Up 59

1. D
2. 7.65 lbs .

## Warm-Up 60

1. 


2. A

Warm-Up 61

1. B
2. A. $\frac{5}{6}$
B. $\frac{9}{25}$
C. $\frac{5}{8}$
D. $\frac{1}{9}$
E. $\frac{4}{5}$
F. $\frac{1}{3}$
G. $\frac{1}{2}$
H. $\frac{1}{5}$
I. $\frac{5}{7}$

Warm-Up 62

1. D
2. B

3. Show the prime factorization of 72 using exponents. (Show your work and circle your final answer.)
4. Find the prime factorization for the number 48 by completing the factor tree.


Operations


1. Look at the fractions below. Which fraction is the greatest? Which fraction is the least? (Circle and label your answers.)
$\frac{5}{6}$
$\frac{5}{9}$
$\frac{2}{3}$
$\frac{5}{12}$
2. The mixed numbers below are what Chandler and Joseph wrote on the board. Who wrote the greater mixed number? (Circle your final answer.)
 Name $\qquad$ Date $\qquad$
3. What is the correct definition of a common factor? (Circle the correct letter.)
A. a factor shared by one number
B. the bottom number in a fraction
C. a factor shared by two or more numbers
D. the top number in a fraction
4. Circle the expressions below where exponents are used correctly to make the number sentences true.

$$
\begin{array}{lll}
3^{3}=2 \times 3 & 4^{2}=4 \times 4 & 6^{2}=9 \times 4 \\
3^{2}=3 \times 3 & 5^{2}=2 \times 5 & 7^{2}=2 \times 7
\end{array}
$$

1. Jim bought a new drill that was on sale for $30 \%$ off of the retail cost of the drill. The retail cost of the drill Jim bought including tax was $\$ 75$. If Jim paid with a $\$ 100$ bill, how much money did he receive back? (Show your work and circle your final answer.)
2. The science test Charles took this week had 60 questions. Charles answered $85 \%$ of the questions correctly. Last week, Charles took a test in the same class with the same number of questions on the test. During the test, he answered only $70 \%$ of the questions correctly. How many more questions did Charles answer correct on this week's test than on last week's test? (Show your work and circle your final answer.)

3. For every 8 laps Janet swam during swimming practice, Margo only swam 7. If Janet swam 48 laps during practice, how many laps did Margo swim? (Circle the correct letter.)
A. 48
B. 46
C. 44
D. 42
4. Coach Jon is putting basketball jerseys into plastic containers for storage. Each container can hold 24 jerseys. Which number sentence can be used to find the total number of containers that he needs in order to store all 96 jerseys? (Circle the correct letter.)
A. $96 \times 12=\square$
C. $96 \div 24=\square$
B. $96+$ $\square$ $=24$
D. $\square$ $-12=96$

5. Solve the problems below.
A.
434,569

- 15,692
B.
D.
$9 6 \longdiv { 3 4 5 6 }$
C.

| 957 |
| ---: |
| $\times 887$ | | 176,950 |
| ---: |
| $+195,398$ |

2. Two-fifths of the 6th-grade students voted for class president. If there were 150 students that voted, how many students are in 6th grade? (Show your work and circle your final answer.)

3. Mrs. Frankum buys apples by the basket. A small basket holds 18 apples and costs $\$ 10.50$. A medium-sized basket holds 32 apples and costs $\$ 12.99$. The largest basket holds 48 apples and costs $\$ 18.79$. If Mrs. Frankum bought 3 small, 2 medium, and 5 large baskets, how many total apples did Mrs. Frankum buy? What would be the total cost? (Show your work and circle your final answers.)
4. Mrs. Hinojosa makes jelly each month to sell at a store. Each small batch of jelly will make 24 jars. Each large batch will make 48 jars. Yesterday, Mrs. Hinojosa made 192 jars of strawberry jelly. Which statement below is true about the number of batches of jelly Mrs. Hinojosa made yesterday? (Circle the correct letter.)
A. She made 3 large batches of jelly and 5 small batches of jellly.
B. She made 5 large batches of jelly and 2 small batches of jelly.
C. She made 3 large batches of jelly and 3 small batches of jelly.
D. She made 3 large batches of jelly and 2 small batches of jelly.

## Operations



1. Michael drives a truck for a living. He drives Monday through Friday, driving an average of 9 hours each day. He drives 70 miles per hour. At this rate, how many miles will Michael drive in a 5-day period? (Show your work and circle your final answer.)
2. Pete went shopping for school clothes. He bought 5 shirts for $\$ 15.99$ each, 3 packages of socks for $\$ 5$ each, 4 pair of jeans for $\$ 45.94$ each, and a pair of shoes for $\$ 54$. Which expression shows how much money Pete spent altogether (not including tax)?
(Circle the correct letter.)
A. $(3 \times \$ 15.99)+(5 \times \$ 5)+(4 \times \$ 45.94)+\$ 54=$ $\square$
B. $(5 \times \$ 15.99)+(3 \times \$ 5)+(3 \times \$ 45.94)+\$ 54=$ $\square$
C. $(5 \times \$ 15.99)+(3 \times \$ 5)+(4 \times \$ 45.94)+\$ 54=$ $\square$
D. $(2 \times \$ 15.99)+(3 \times \$ 5)+(4 \times \$ 45.94)+\$ 54=$ $\square$

## Warm-Up 1

1. 12 packages
2. 1,476 washing machines

## Warm-Up 2

1. $1,2,4,8 ; 8$
2. B

## Warm-Up 3

1. $2^{3} \times 3^{2}$
2. 



## Warm-Up 4

1. Greatest: $\frac{5}{6}$

Least: $\frac{5}{12}$
2. Chandler

## Warm-Up 5

1. D
2. D

## Warm-Up 6

1. D
2. 917 more cans

## Warm-Up 7

1. D
2. $\$ 322.50$

## Warm-Up 8

1. A. 715,716
B. 508,400
C. 244,494
2. C

## Warm-Up 9

1. $\$ 1,875$
2. 770 students

## Warm-Up 10

1. $2 \times 2 \times 2 \times 2 \times 5 \times 5$
2. $\$ 800$

## Warm-Up 11

1. 7,560 boxes
2. D

## Warm-Up 12

1. D
2. 800 people

Warm-Up 13

1. C
2. $3^{2}=3 \times 3 ; 4^{2}=4 \times 4$; $6^{2}=9 \times 4$

## Warm-Up 14

1. $\$ 47.50$
2. 9 more questions

Warm-Up 15

1. A. $\frac{3}{16}$
B. $\frac{4}{9}$
C. $\frac{11}{18}$
D. $\frac{1}{14}$
E. $\frac{7}{10}$
F. $\frac{1}{2}$
2. $3^{2} \times 7$

Warm-Up 16

1. Step $3 ; 184 \div 8=23$, not 24
2. D

Warm-Up 17

1. yes; 1,960
2. 9

Warm-Up 18

1. 30 cookies
2. D

Warm-Up 19

1. 65
2. 4,050 packages

Warm-Up 20

1. Hannah's dog: 40 lbs .

Sarah's dog: 20 lbs.
2. 624 ounces; 39 pounds

## Warm-Up 21

1. $\$ 4,694$
2. A. 2,520 jars
B. price per jar

## Warm-Up 22

1. 85 boxes
2. 4,440 cookies were sold at the bake sale. 380 bags of cookies were left over.

## Warm-Up 23

1. 33 dresses
2. 7 party favors

## Warm-Up 24

1. $\$ 694.50$
2. $\$ 812$

Warm-Up 25

1. 2 students
2. $\$ 171.99$

## Warm-Up 26

1. C
2. $5,226.29$

## Warm-Up 27

1. 42
2. C

Warm-Up 28

1. $\$ 4,384$
2. 30 pencils

## Warm-Up 29

1. 34 yards
2. A. 94,710
B. 444,066
C. 255,192

Warm-Up 30

1. 45 cheerleaders
2. $\$ 178.85$;



Warm-Up 31

1. 50 students
2. A. 22
B. 24
C. 23

Warm-Up 32

1. $2 \times 2 \times 2 \times 2 \times 5 \times 5$
2. $\$ 3,132$

Warm-Up 33

1. D
2. C

Warm-Up 34

1. A. 418,877
B. 36
C. 848,859
D. 372,348
2. 375 students

Warm-Up 35

1. $\$ 5,625$
2. $\frac{5}{10}$ or $\frac{1}{2}$

Warm-Up 36

1. $\$ 12,750$
2. 39 points

Warm-Up 37

1. C
2. 18 months

Warm-Up 38

1. 100
2. No. $80 \%$ of 500 is 400 , so they will be 40 lollipops short.
Warm-Up 39
3. 1,496 people
4. B

Warm-Up 40

1. $\$ 15.30$
2. D

Warm-Up 41

1. 358 apples; $\$ 151.43$
2. D

Warm-Up 42

1. 3,150 miles
2. C

Warm-Up 43

1. A
2. $2^{5} \times 3 \times 5$

## Warm-Up 44

1. D
2. A. 4,366
B. 3,828
C. 5,850
D. 4,956

Warm-Up 45

1. 947,585

$$
\frac{-276,844}{670,741}
$$

2. Answers will vary.

Warm-Up 46

1. 4 days
2. D

Warm-Up 47

1. D
2. $\$ 21.12$

Warm-Up 48

1. $\$ 7,925$
2. 0

Warm-Up 49

1. 35 yellow pencils
2. 6 band members

Warm-Up 50

1. C
2. TV Haven

## Warm-Up 51

1. $\$ 46$
2. D

Warm-Up 52

1. D
2. 6,912 pencils

## Warm-Up 53

1. $\$ 48$
2. B

Warm-Up 54

1. D
2. D

Warm-Up 55

1. 10 cups
2. Divide the numerator by the denominator to get 0.75 .

## Warm-Up 56

1. C
2. Cory had 72 cards.

## Warm-Up 57

1. 640 people
2. 15 students

## Warm-Up 58

1. 160 pieces of cheese
2. C

Warm-Up 59

1. C
2. $\$ 23,085.21$

Warm-Up 60

1. $\$ 77.50$
2. $\frac{5}{6}$

Warm-Up 61

1. D
2. 42 stuffed animals

Warm-Up 62

1. A
2. D

## DATLT <br> Warm-Up 1

1. Which statement about a parallelogram is not correct? (Circle the correct letter.)
A. Each set of opposite angles is congruent.
B. Each set of opposite sides is congruent.
C. Each set of opposite sides is parallel.
D. All angles, when added together, equal $90^{\circ}$.
2. Label circumference, diameter, and radius on the model below.

$\qquad$
3. Jeff drew the triangle below on the board. He gave the measure of one angle but asked his friend to find the measure of each of the two remaining angles. Which correct response did Jeff's friend give? (Circle the correct letter.)

A.

B.

C.

D.

4. Jeff wrote the measures below for another triangle. He challenged his friend to find the correct angle measures for this new triangle. Which of the following could be the answer? (Circle the correct letter.)
A. $110^{\circ}, 67^{\circ}, 54^{\circ}$
B. $40^{\circ}, 90^{\circ}, 50^{\circ}$
C. $90^{\circ}, 45^{\circ}, 60^{\circ}$
D. $110^{\circ}, 90^{\circ}, 60^{\circ}$
5. Look at the isosceles triangle. The length of $\overline{A C}$ is equal to $\overline{C B}$. If $m \angle A=65^{\circ}$, what is $\mathrm{m} \angle C$ ? (Show your work and circle your final answer.)

6. Liz is trying to name points on the number line. What points do $A, B, C$, and $D$ represent?


Measurement and Geometry


1. Sheryl is making a dessert for her son's engagement party. The recipe calls for two 8-ounce cans of strawberries. While shopping, Sheryl found frozen strawberries that came in a 1 pound, 7-ounce bag. How many ounces of strawberries will Sheryl have left if she buys the frozen strawberries? (Show your work and circle your final answer.)
2. Which two streets on the map below appear to be parallel? (Circle the correct letter.)
A. Allie Dr. and Beth Lane
B. Liz Blvd. and Allie Dr.
C. Liz Blvd. and Beth Lane
D. Jennifer St. and Beth Lane

Jennifer St. Liz Blvd. Beth Lane



1. How long is the pencil to the nearest sixteenth of an inch? (Circle your final answer.)


2. Cherish multiplied two hundred twelve times the number of ounces in a pound. What product did Cherish get? (Show your work and circle your final answer.)

3. Use your ruler to draw a rectangle that is 3 cm wide and 8 cm long. What is the area of the rectangle? What is the perimeter? (Show your work and circle your final answers.)
4. Doug bought a new ice cooler for the fishing tournament he entered. The ice cooler has a capacity of 240 pounds. How many 10-pound catfish can Doug's cooler hold? (Show your work and circle your final answer.)
5. Dale is planting a vegetable garden that measures 15 feet by 9 feet. What is the formula for finding the perimeter of the garden? (Circle the correct letter.)
A. $A=2 \times(I+w)$
B. $P=\frac{\mathrm{b} \times \mathrm{h}}{2}$
C. $A=\frac{\mathrm{bxh}}{2}$
D. $P=2 \times(I+w)$
6. When Lauren awoke at 7:00 A.m., the temperature was $43^{\circ} \mathrm{F}$. By 3:00 p.м., the temperature was $17^{\circ}$ warmer. What was the temperature at 3:00 р.м.? (Show your work and circle your final answer.)
$\qquad$
$\qquad$

## Warm-Up 42

1. Beth drew a square that had a perimeter of 60 centimeters. She asked John to write four statements about the square she drew. Which statement below that John made is not correct? (Circle the correct letter.)
A. The square has an area of 225 square centimeters.
B. The square has a perimeter of 60 centimeters.
C. The square has an area of 300 square centimeters.
D. Each side of the square has a length of 15 centimeters.
2. Which image shows a reflection of the letter? (Circle the correct letter.)
A.

B.

C.

D.

| $R$ |  |
| :--- | :--- |
| $R$ |  |



## Warm-Up 2

1. D
2. B

## Warm-Up 12

1. B
2. Divide 2.4 by 4 to get the length. The length of each side will be 0.6 meters.

## Warm-Up 13

1. 800 yards $^{2}$
2. 384 cubes

Warm-Up 14

1. 4 pints
2. $63 \mathrm{~cm}^{2}$

Warm-Up 15

1. B
2. B

Warm-Up 16

1. D
2. B

Warm-Up 17

1. $50^{\circ}$
2. A: $1 \frac{1}{4}$

B: $1 \frac{1}{2}$
C: $2 \frac{1}{4}$
D: $2 \frac{3}{4}$
Warm-Up 18

1. 7 ounces
2. C

Warm-Up 19

1. C
2. $\$ 12$

Warm-Up 20

1. $\$ 58$
2. C

Warm-Up 21

1. $3 \frac{9}{16}$ inches
2. 16,576

Warm-Up 22

1. $\mathrm{A}=40$ feet $^{2} ; \mathrm{P}=28$ feet
2. C

Warm-Up 23

1. $150 \mathrm{~cm}^{2}$
2. Perimeter: 48 feet Area: 96 feet $^{2}$
Warm-up 24
3. 48 guests
4. acute

## Warm-Up 25

1. $2 \frac{9}{16}$ inches
2. 3,392

Warm-Up 26

1. Area: $24 \mathrm{~cm}^{2}$ Perimeter: 22 cm
2. 24 catfish

## Warm-Up 27

1. A, C, B
2. C

Warm-Up 28

1. 12 cups of milk
2. 56.52 ft .

Warm-Up 29

1. 2 trips
2. 75.36 in .

Warm-Up 30

1. 9 cm
2. 



Warm-Up 31

1. A. $(-3,3)$
B. X
C. $(2,-3)$
2. 9 months

Warm-Up 32

1. 12.56 feet
2. A

Warm-Up 33

1. $3 \frac{6}{16}$ inches
2. A

Warm-Up 34

1. 2 loads each
2. B

Warm-Up 35

1. $2 \frac{3}{4}$ in. or 2.75 in .
2. 5 lbs .8 oz . or 88 oz .

Warm-Up 36

1. C
2. 4:00 P.M.

Warm-Up 37

1. B
2. D

Warm-Up 38

1. $220^{\circ}$
2. D

Warm-Up 39

1. Sunday
2. 20 pints

Warm-Up 40

1. 18.84 feet
2. 3 feet

Warm-Up 41

1. D
2. $60^{\circ} \mathrm{F}$

Warm-Up 42

1. C
2. C

Warm-Up 43

1. 30 feet
2. C

Warm-Up 44

1. B
2. 4 cups

Warm-Up 45


Warm-Up 46

1. D
2. 153 days

Warm-Up 47

1. D
2. C

Warm-Up 48

1. C
2. A. rectangular prism
vertices: 8
edges: 12
faces: 6
B. square pyramid
vertices: 5
edges: 8
faces: 5
Warm-Up 49
3. C
4. B

Warm-Up 50

1. $\frac{3}{7}$


## Warm-Up 51

1. 8 years
2. hexagon and rectangle

Warm-Up 52

1. yard
2. 172 cm

Warm-Up 53

1. cube
2. 152 ft .

Warm-Up 54

1. Sally
2. D

Warm-Up 55

1. 342 feet
2. 192 ounces

## Warm-Up 56

1. B
2. D

Warm-Up 57

1. $380 \mathrm{~m}^{2}$
2. 80 feet

Warm-Up 58

1. 37.68 ft .
2. $38^{\circ} \mathrm{F}$

Warm-Up 59

1. C
2. Answers may vary.

## Warm-Up 60

1. C
2. A. Y
B. X
C. Z
D. W

Warm-Up 61

1. A
2. 6 inches

## Warm-Up 62

1. B
2. B

$\qquad$
$\qquad$
3. Ernest is playing a board game with Calley that uses the spinner below. If the spinner is spun twice, which tree diagram shows all possible outcomes the pointer can land on during both spins? (Circle the correct letter.)
A. $\left\{\begin{array}{l}4 \text { Spaces } \\ 2 \text { Spaces } \\ 5 \text { Spaces }\end{array}\right.$

C.

4 Spaces
4. Cindy is playing a card game with her brother. Three of the cards she has are 7 s , three other cards are 8s, and two of the cards are 9s. If Cindy lays the cards facedown, and her brother selects one card, what is the probability the card he selects is not an 8 ? (Show your work and circle your final answer.)

5. On Monday, Jared can wear either a pair of jeans or a pair of khaki pants with a blue, white, or red shirt. How many possible combinations of 1 pant and 1 shirt are possible? (Show your work and circle your final answer.)
6. Jefferson is doing an art project. He can use a paintbrush or sponge. He can use green, red, or blue paint. Complete the diagram below showing all possible combinations Jefferson can use in his art project.
 Date $\qquad$
$\qquad$ . (Circle the correct
A. certain
B. likely
C. possible
D. not possible
7. Look at the graph. On what 2 consecutive days did the number of tires changed increase the most? (Circle your final answer.)

Tires Changed


Graphs, Data and Probability
$\qquad$ Date $\qquad$

## Warm-Up 18

1. Jenna wants to draw a picture. She has 4 crayons, 3 markers, and 3 colored pencils. If she plans to draw her picture with only 1 crayon, 1 marker, and 1 colored pencil, how many possible combinations can she choose from? (Show your work and circle your final answer.)
2. Ernest used a spinner that had 2 odd numbers and 2 even numbers. Which spinner below did Ernest use? (Circle the correct letter.)
A.

B.

C.

D.

$\qquad$ Date $\qquad$
3. Which statement about the mode of a data set is not correct? (Circle the correct letter.)
A. The number that appears the most in a data set is the mode.
B. The number repeated the most in a data set is the mode.
C. If there are no repeated numbers in a data set, there is no mode.
D. The mode is the middle number in a data set.
4. How many more pages did Terry, Jack, and Lou read than Sam and Peggy? (Show your work and circle your final answer.)

$\qquad$

## Warm-Up 40

1. Nick bought a package of jawbreakers containing 4 blue, 3 red, 2 green, and 3 yellow jawbreakers. He gave 1 blue, 1 red, and both green jawbreakers to his brother. If Nick now selects 1 jawbreaker without looking, what is the probability he will not select a blue jawbreaker? (Show your work and circle your final answer.)
2. Look at the graph. There was a $100 \%$ chance of rain predicted for one day this week. Which day did it probably rain? (Circle your final answer.)

Number of Student Bike Riders


1. John is buying 2 new shirts. The shirts he likes are hanging on a rack. There are 2 orange, 2 black, and 1 green shirt hanging on the rack. How many color combinations are possible for John to buy his 2 shirts? (Show your work and circle your final answer.)
2. Jason is looking for a new sweatshirt for gym class. He can choose between extra-large, large, or medium-sized sweatshirts. He can choose a red, white, or blue sweatshirt. Which diagram shows all the possible combinations of 1 size and 1 color sweatshirt? (Circle the correct letter.)
CL
XL $\underset{\substack{\text { Red } \\ \text { Rlue }}}{\substack{\text { White } \\ \text { Red } \\ \hline}}$
XL $\underset{\text { Rlue }}{\substack{\text { White } \\ \text { Rlue }}}$
$\mathrm{XL} \underbrace{\substack{\text { White } \\ \text { Red } \\ \text { Blue }}}_{\text {Blue }}$
A. $M<\begin{gathered}\text { White } \\ \text { Red } \\ \text { Blue }\end{gathered}$
B. $L<\begin{gathered}\text { White } \\ \text { Red } \\ \text { Blue }\end{gathered}$
C. $\mathrm{L} \underbrace{\text { White }}_{\text {Blue }}$
D. $L<\begin{aligned} & \text { White } \\ & \text { Red } \\ & \text { Blue }\end{aligned}$

$\mathbf{M}=\substack{\text { White } \\ \text { Red } \\ \text { Blue }}$

## DATM2 Name <br> $\qquad$ Date <br> $\qquad$ <br> Warm-Up 46

1. The numbers below show Mark's grades on 8 spelling tests. Mark calculated the $\ldots \ldots$ of this data and found a result of 84. What did Mark calculate? (Circle the correct letter.)
A. range
B. median
C. mode

## 84, 76, 84, 88, 94, 100, 96, 92

D. average
2. Libby wrote the grades she scored on her math homework on a sheet of paper but forgot one grade. She knows the mode of her grades is 92 . What is the median of Libby's grades? (Show your work and circle your final answer.)

| Libby's <br> Grades | $92,78,83,79,100,92,78,83,98,97,96, \square$ |
| :--- | :--- |



## Warm-Up 3

1. 6 color combinations
2. 6 ways

## Warm-Up 4

1. $\frac{1}{6}$
2. 84

## Warm-Up 5

1. B
2. D

## Warm-Up 6

1. 6 combinations
2. vanilla, chocolate
vanilla, strawberry
vanilla, vanilla
chocolate, strawberry
chocolate, chocolate

## Warm-Up 7

1. A
2. $\frac{1}{12}$

## Warm-Up 8

1. 8 combinations
2. The chance for rain is likely.
Warm-Up 9
3. $\frac{1}{13}$
4. $\frac{1}{4}$ or $25 \%$

## Warm-Up 10

1. C
2. D

Warm-Up 11

1. C
2. $\frac{2}{9}$

## Warm-Up 12

1. A
2. B

Warm-Up 13

1. 9 combinations
2. 6 color combinations

Warm-Up 14

1. Mary
2. 4 ways

Warm-Up 15

1. Sandra: 40 years

Adam: 35 years
2. B

Warm-Up 16

1. $\frac{15}{100}=\frac{3}{20}$
2. 16

Warm-Up 17

1. B
2. Thursday and Friday

## Warm-Up 18

1. 36 combinations
2. B

Warm-Up 19

1. C
2. 45 shots

Warm-Up 20

1. D
2. 7 baskets

## Warm-Up 21

1. $\frac{2}{9}$
2. 150 rose bushes

## Warm-Up 22

1. D
2. A

Warm-Up 23

1. Nancy $=84$

Linda $=74$

Jamal $=72$
Broderick $=83$
Sampson $=67$
Highest mean = Nancy
2. $\frac{8}{15}$

## Warm-Up 24

1. D
2. D

## Warm-Up 25

1. D
2. blue, orange
blue, green
orange, orange
orange, green
green, green

## Warm-Up 26

1. 6 combinations
2. 9 color combinations

Warm-Up 27

1. Janet: 12 miles

Mark: 29 miles
Paul: 17 miles
2. Answers may vary.

Possible answer:
Brandon: \$455
Mitchell: \$295

## Warm-Up 28

1. 9 combinations
2. A

Warm-Up 29

1. 59 minutes
2. $\frac{1}{13}$

Warm-Up 30

1. $80 \%$
2. 14 ribbons

## Warm-Up 31

1. C
2. $\frac{3}{5}$

Warm-Up 32

1. D
2. 0.6

3. $\frac{1}{5}$

## Warm-Up 34

1. 6 combinations
2. A

Warm-Up 35

1. $\frac{1}{3}$
2. B

Warm-Up 36

1. 6 color combinations
2. D

Warm-Up 37

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

Warm-Up 38

1. C
2. The middle value in a list of numbers ordered from least to greatest or greatest to least.
Warm-Up 39
3. D
4. 46 more pages

Warm-Up 40

1. $\frac{5}{8}$
2. Wednesday

Warm-Up 41

1. $\frac{6}{11}$
2. 



## Warm-Up 42

1. D
2. 6 ways

## Warm-Up 43

1. unlikely
2. $50 \%$ or $\frac{1}{2}$

Warm-Up 44

1. $\frac{3}{5}$
2. 



## Warm-Up 45

1. 5 color combinations
2. D

Warm-Up 46

1. C
2. 92

Warm-Up 47

1. $\frac{3}{4}$
2. 225 tulips

## Warm-Up 48

1. C
2. 14 color combinations

Warm-Up 49

1. D
2. 5 color combinations

## Warm-Up 50

1. $\frac{2}{9}$
2. $\frac{5}{6}$

## Warm-Up 51

1. $\frac{1}{8}$
2. 7 fewer miles

## Warm-Up 52

1. D
2. Seth: $\frac{5}{36}$

Jackie: $\frac{3}{36}$ or $\frac{1}{12}$

Warm-Up 53

1. B
2. $\frac{3}{4}$

Warm-Up 54

1. $\frac{1}{2}$
2. 24 ways

Warm-Up 55

1. 4
2. Ana, Petra, Kayla, Marci, and Sarah

## Warm-Up 56

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

## Warm-Up 57

1. $\frac{1}{5}-$
2. 1,050 more water bottles

Warm-Up 58

1. 120 more kites
2. $\$ 608$

Warm-Up 59

1. A. 14 girls
B. 54 girls
2. Robin: 89 miles

Wanda: 92 miles
Terry: 83 miles
Leeann: 84 miles

## Warm-Up 60

1. 36
2. A. Wednesday and

Thursday
B. Thursday and Friday

## Warm-Up 61

1. 31 more students
2. 28 minutes

## Warm-Up 62

1. 115 newspapers
2. 10 balloons

Name $\qquad$ Date $\qquad$

1. Look at the table. Which expression best describes the value of $m$ in terms of the value of $n$ ? (Circle the correct letter.)

| $\boldsymbol{n}$ | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\boldsymbol{m}$ | 11 | 15 | 19 | 23 | 27 | 31 | 35 |

A. $n+9=m$
B. $4 n+4=m$
C. $4 n-3=m$
D. $4 n+3=m$
2. Look at the pattern of numbers. Heather is trying to find the seventh number in the pattern. Which number sentence can Heather use to find $z$, the seventh number in the pattern? (Circle the correct letter.)
A. $z=15 \times 7$
B. $z=15+7$
C. $z-15-7$
D. none of the above

$$
15, \quad 30, \quad 50, \quad 70, \ldots
$$

$\qquad$

1. Chelsea bought a box of beads for making necklaces. The box has 920 beads. After taking out 40 beads at random, she notices that 19 of the beads are blue. Based on Chelsea's observation, what is the best prediction of the total number of blue beads that are in the box that Chelsea bought? (Show your work and circle your final answer.)
2. Abigail wants to go skating with her friends. Her mom told her she needed to stay home to study her math. Abigail told her that she felt confident she would score $100 \%$ on her next test. Abigail's mom told her if she could correctly work the problem below, she could go skating. Did Abigail get to go skating?
(Circle your final answer.)
$(15 \times 30) \div(30-15)$

## Abigail's Work

| $(15 \times 30) \div(30-15)$ |  |
| :---: | :---: |
| $450 \div 15$ |  |
| 15 | $1 5 \longdiv { 4 5 0 }$ |
| $\times 30$ |  |
| 450 | $\frac{-45}{00}$ |
|  | $\frac{-0}{0}$ |
| Answer $=30$ |  |

1. In gym class, there is 1 kickball for every 12 students. Altogether, there are 672 students. Which proportion below will correctly find $n$, the number of kickballs there are in gym class? (Circle the correct letter.)
A. $\frac{\mathrm{n}}{672}=\frac{1}{12}$
B. $\frac{n}{12}=\frac{1}{672}$
C. $\frac{n}{1}=\frac{12}{672}$
D. $\frac{12}{n}=\frac{1}{672}$
2. Henry has a collection of music CDs. Upon categorizing his CDs, he finds 0.45 of his CDs are country music. Which statement is correct about the fraction of CDs that are country music? (Circle the correct letter.)
A. 9 out of every 20 CDs are country music.
B. 4 out of every 20 CDs are country music.
C. 25 CDs are country music.
D. none of the above

3. Of the students in Mr. Riley's math class, 0.7 of the students scored $100 \%$ on their tests. What percent of the students scored $100 \%$ on their tests? (Show your work and circle your final answer.)
4. Solve the problems below. (Show your work and write your final answers on the lines.)
A. June is watching deer grazing in a field. Of the 20 deer in the field, 12 stop grazing when she stops her car in front of the field. What percent of the deer stopped grazing when June stopped her car in front of the field?
$\qquad$ \%
B. Cameron invited 25 friends to his 16th birthday party. Of the friends invited, 19 came to the party. What percent of the friends Cameron invited came to his party?
$\qquad$ \%

5. Marcus and Mary built a house out of wooden cubes. Of the cubes, 0.35 were tan. The rest of the wooden cubes were black. What fraction (in lowest terms) of the cubes were black? (Show your work and circle your final answer.)
6. Freddy emptied his piggy bank. There were 580 coins inside the bank. Sixty-nine coins were dimes, 83 coins were nickels, 72 coins were quarters, 68 coins were fifty-cent pieces, 110 coins were silver dollars, and the rest of the coins were pennies. How many of the coins were pennies? (Show your work and circle your final answer.)

7. Robin bought 3 books for $\$ 18$ each, a new shirt for $\$ 38.50$, and a new vacuum cleaner. Altogether, tax came to $\$ 68.78$. Robin wrote a check for $\$ 210.78$. How much did the vacuum cleaner cost (before tax)? (Show your work and circle your final answer.)
8. Mrs. Murphy bought a package of 800 sheets of construction paper. She is doing an art project with her students where each of her 35 students will need exactly 18 sheets. She plans to do the art project herself so she will have something to show the students as an example before they start. How many sheets of construction paper will Mrs. Murphy have left after the class completes the project? (Show your work and circle your final answer.)
9. Scott bought 6 boxes of chocolate candy for his store. There were 36 pieces of chocolate in each box. During the month, customers purchased all but 9 pieces. If $p$ represents the number of chocolate candy pieces, which equation can be used to show the number of chocolate candy pieces purchased by customers? (Circle the correct letter.)
A. $(36 \times 6)+9=p$
B. $(36 \div 6)-9=p$
C. $(36+6)-9=p$
D. $(36 \times 6)-9=p$
10. Mike has a new fishing box the holds 18 fishing lures. Of the lures, 9 are orange. The rest are yellow and black. What is the ratio of orange fishing lures to yellow and black fishing lures? (Show your work and circle your final answer.)

11. Warren has a photo album of his son's first birthday party. There are 30 pages in the photo album. The first 10 pages hold 8 pictures each. The remaining pages hold 10 pictures each. Which equation will find $P$, the total number of pictures the album can hold? (Circle the correct letter.)
A. $P=(30 \times 8)+(10 \times 10)$
B. $P=(10 \times 8)+(20 \times 10)$
C. $P=(8 \times 10)+(10 \times 30)$
D. $P=(8 \times 8)+(20 \times 30)$
12. Solve the equation below if $y=4$ and $z=5$. (Show your work and write your final answer in the box.)

$$
y \times 12-z=\square
$$

## Algebra, Patterns and Functions

Warm-Up 1

1. 756 haircuts
2. B

Warm-Up 2

1. $4: 3$
2. $\frac{2}{3}$

Warm-Up 3

1. A. 2
B. 32
2. C

Warm-Up 4

1. 377 pennies
2. 370 cans

Warm-Up 5

1. A. 105
B. 133
C. 115
D. 307
2. $4 \frac{3}{8}$ feet

Warm-Up 6

1. C
2. A. $y=1 \frac{1}{8}$
B. $z=\frac{3}{4}$

Warm-Up 7

1. D
2. D

Warm-Up 8

1. 437 blue beads
2. Yes

Warm-Up 9

1. A
2. A

Warm-Up 10

1. $70 \%$
2. A. $60 \%$
B. $76 \%$

Warm-Up 11

1. B
2. 52 push mowers

Warm-Up 12

1. 3,772 roses
2. C

Warm-Up 13

1. A. $n=\frac{5}{12}$
B. 5
2. B

Warm-Up 14

1. 78
2. D

Warm-Up 15

1. 22 customers
2. A

Warm-Up 16

1. C
2. 15 miles

Warm-Up 17

1. 12 points
2. 4

Warm-Up 18

1. $\$ 9.13$
2. 0

Warm-Up 19

1. 82
2. $40,48,56$

Warm-Up 20

1. D
2. 37

Warm-Up 21

1. 9
2. C

Warm-Up 22

1. D
2. range: 32
mode: 12
median: 16
Warm-Up 23
3. $\$ 50$
4. C

Warm-Up 24

1. A
2. 5

Warm-Up 25

1. $\frac{2}{5}$
2. $\frac{5}{18}$

Warm-Up 26

1. Yes, the two ratios do form a proportion.
2. 18 baseball cards

Warm-Up 27

1. B
2. 468 cars

Warm-Up 28

1. 3,772 cherry snow cones
2. 54 puppies

Warm-Up 29

1. 24 eggs
2. 50 questions

Warm-Up 30

1. $40 \%$
2. D

Warm-Up 31

1. B
2. 26 baskets

Warm-Up 32

1. 38
2. D

Warm-Up 33

1. B
2. $132 \div 11=12$
$132 \div 12=11$
$12 \times 11=132$
$11 \times 12=132$
Warm-Up 34
3. C
4. 24,576 and 96

Warm-Up 35

1. B
2. D


Warm-Up 36

1. C
2. A

Warm-Up 37

1. D
2. 24 cars

Warm-Up 38

1. 24 puppies
2. A

Warm-Up 39

1. $\frac{1}{12}=\frac{6}{72}$ or $\frac{12}{1}=\frac{72}{6}$
2. 35 red baseball caps

Warm-Up 40

1. 25 pages
2. $42,48,54$

Warm-Up 41

1. $3: 7$
2. $7: 3$

Warm-Up 42

1. 48 basketballs
2. C

Warm-Up 43

1. A
2. C

Warm-Up 44

1. A
2. D

Warm-Up 45

1. A
2. B

Warm-Up 46

1. C
2. $60 \%$

Warm-Up 47

1. $70 \%$
2. D

Warm-Up 48

1. 56 blue marbles
2. 90 students

Warm-Up 49

1. A. $y=35$
B. $y=56$
2. D

Warm-Up 50

1. $5: 10$ or $1: 2$
2. D

## Warm-Up 51

1. $\frac{2}{14}$ or $\frac{1}{7}$
2. D

Warm-Up 52

1. 1,249 buttons
2. B

## Warm-Up 53

1. $\frac{13}{20}$
2. 178 coins

Warm-Up 54

1. $\$ 49.50$
2. 152 sheets

## Warm-Up 55

1. D
2. 1:1

## Warm-Up 56

1. B
2. 43

## Warm-Up 57

1. C
2. $\frac{2}{10}$ or $\frac{1}{5}$

## Warm-Up 58

1. $b=(3 \times 12)+(4 \times 9)$
2. $60 \%$

Warm-Up 59

1. C
2. $\frac{1}{4}$

Warm-Up 60

1. $\frac{1}{4}$
2. $y=36-(3 \times 2)-(4 \times 3)+$ ( $2 \times 12$ )
Warm-Up 61
3. A
4. $2: 3$

Warm-Up 62

1. C
2. 24 trucks
