Louisiana Believes

*i*LEAP Test Items

Grade 3 Mathematics

Spring 2014

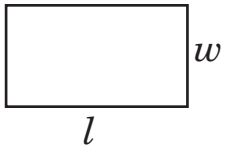
Released June 2014

DEPARTMENT of EDUCATION
Louisiana Believes

iLEAP MATHEMATICS REFERENCE SHEET—GRADE 3

Use the information below to answer questions on the Math test.

Rectangle

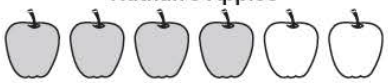


Area $= l \times w$

Perimeter $= l + l + w + w$

The diagram below shows the red and green apples Nathan bought at a store. The red apples are shaded, and the green apples are not shaded.

Nathan's Apples



What fraction of the apples are red?

A. $\frac{1}{4}$

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

C. $\frac{4}{6}$

D. $\frac{4}{2}$

This item measures aspects of 3.NF.1
No Calculator
Key: C

Ms. Lewis has 30 students. She gives each student 8 markers. To find the total number of markers Ms. Lewis gives to her students she uses the equation below.

$$30 \times 8 = ?$$

What is the total number of markers Ms. Lewis gives to her students?

A. 38
B. 240
C. 380
D. 2,400

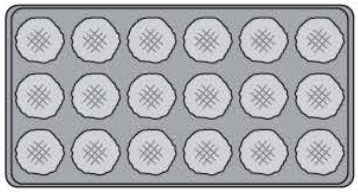
This item measures aspects of 3.NBT.3
No Calculator
Key: B

Jody played the same game 6 times. Each time she played, Jody scored 5 points. The total points she scored can be found by using 6×5. How many total points did Jody score?

A. 12
B. 25
C. 30
D. 35

This item measures aspects of 3.OA.7
No Calculator
Key: C

Jesse made 3 batches of cookies. Each batch had 6 cookies. Jesse put all the cookies he made on a tray as shown in the picture below.



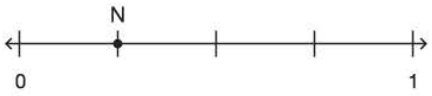
Which expression shows how to find the total number of cookies Jesse made?

A. $3 + 6$
B. 3×6
C. $3 + 18$
D. 3×18

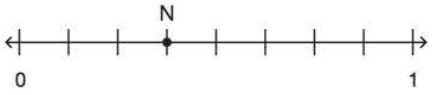
This item measures aspects of 3.OA.3
No Calculator
Key: B

Which number line shows point N at $\frac{3}{4}$?

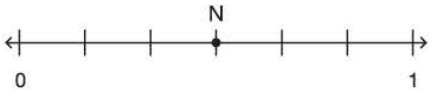
A.



B.



C.



D.

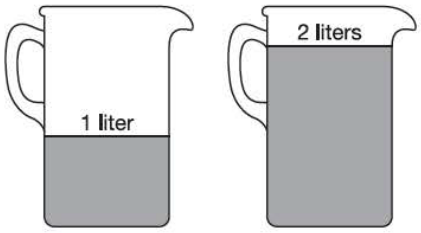
This item measures aspects of 3.NF.2b
No Calculator
Key: D

Lenny and Earl made cookies. Lenny put 5 raisins on each of 3 cookies. Earl put 3 raisins on each of 5 cookies. Which number sentence shows that Lenny and Earl each used the same number of raisins?

A. $5 + 3 = 3 + 5$
B. $5 \times 3 = 3 \times 5$
C. $5 \div 3 = 3 \div 5$
D. $5 - 3 = 3 - 5$

This item measures aspects of 3.OA.5
No Calculator
Key: B

Cali is making punch. She uses the amounts of the two ingredients shown below.



This item measures aspects of 3.MD.2
No Calculator
Key: C

How many liters of punch does Cali make?

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

B. 2 liters

C. 3 liters

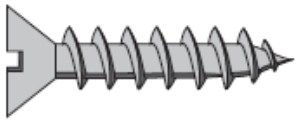
D. 4 liters

Bobbie is using 260 beads to make 20 necklaces. She uses the same number of beads for each necklace. Which expression could Bobbie use to find how many beads she needs for each necklace?

A. $260 + 20$
B. $260 - 20$
C. 260×20
D. $260 \div 20$

This item measures aspects of 3.OA.2
No Calculator
Key: D

Robin needs to buy screws to build a rabbit cage. The screws must be the same length as the one below. Use your ruler to measure the screw below.



Which should be the length of the screws that she buys?

A. 1 inch

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

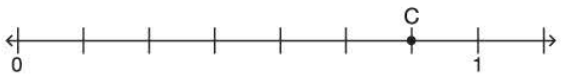
C. 2 inches

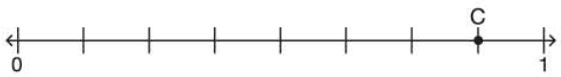
D. $2\frac{1}{2}$ inches

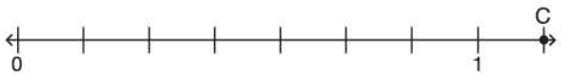
This item measures aspects of 3.MD.4
No Calculator
Key: B

Which number line has point C marked at $\frac{7}{8}$?

A.


B.


C.


D.


This item measures aspects of 3.NF.2b
No Calculator
Key: C

Liz counted the number of squirrels she saw at two different parks. At one of the parks she counted 317 squirrels. At the other park she counted 244 squirrels. How many squirrels, in total, did Liz count at the two parks?

A. 551 squirrels
B. 561 squirrels
C. 651 squirrels
D. 661 squirrels

This item measures aspects of 3.NBT.2
No Calculator
Key: B

Jason was given the expression below.

$$5 \times (2 \times 7)$$

Jason then wrote a new expression that was equal to the one he was given. Which expression could Jason have written?

A. $2 \times (7 \times 5)$
B. $5 + (2 + 7)$
C. $(5 \times 2) + (5 \times 7)$
D. $(5 \times 2) \times (5 \times 7)$

This item measures aspects of 3.OA.5
No Calculator
Key: A

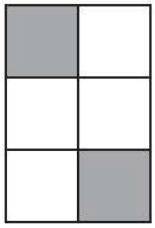
Lee paid $168 for a blue table and $214 for a brown table. Using the expression below, how much more did Lee pay for the brown table than for the blue table?

214 – 168

A. $46
B. $54
C. $146
D. $154

This item measures aspects of 3.NBT.2
No Calculator
Key: A

Lara divided a rectangle into equal sections as shown below.



This item measures aspects of 3.G.2
No Calculator
Key: D

What fraction of the rectangle is shaded?

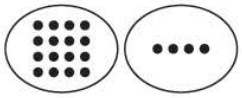
A. $\frac{1}{4}$

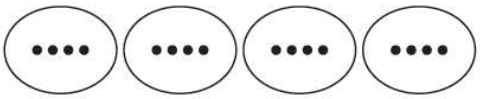
B. $\frac{1}{6}$

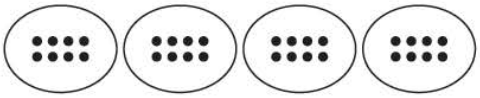
C. $\frac{2}{4}$

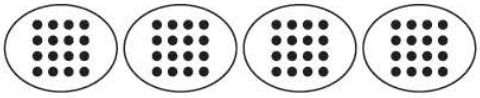
D. $\frac{2}{6}$

Latrice bought a package of 16 jellybeans. She wants to divide the jellybeans equally into 4 smaller packages. Which model should she use to find the number of jellybeans to put in each package?

A. 

B. 

C. 

D. 

This item measures aspects of 3.OA.3
No Calculator
Key: B

Steven and Nelly each have nine cups. Steven put six beads in each cup that he has. Nelly put four beads in each cup that she has. How many total beads did they put in the cups?

A. 28
B. 36
C. 81
D. 90

This item measures aspects of 3.OA.8
No Calculator
Key: D

Ramon hiked $\frac{6}{6}$ of the way up a mountain. He graphed point R on a number line to show the fraction of the mountain he hiked up. Which number line could be Ramon's number line?

A.


B.


C.


D.

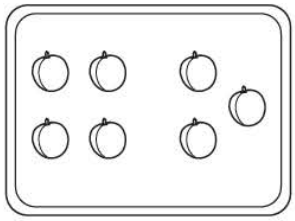

This item measures aspects of 3.NF.3c
No Calculator
Key: C

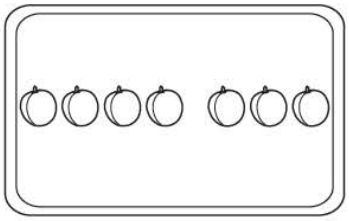
Darius bought 10 game tickets at the fair. He used 3 tickets to play the bucket toss game. Then his sister gave him the 5 tickets she had leftover. How many tickets did Darius have left?

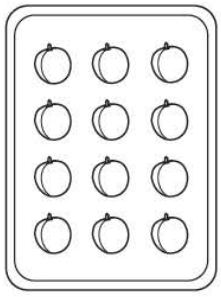
A. 7
B. 8
C. 12
D. 18

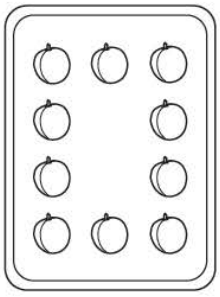
This item measures aspects of 3.OA.8
No Calculator
Key: C

There are 3 peach trees. Landon picked 4 peaches from each tree and placed them on a tray. Which tray shows all of the peaches Landon picked?

A. 

C. 

B. 

D. 

This item measures aspects of 3.OA.3
No Calculator
Key: B

Mr. Reyes has 5 horses. The weight, in kilograms, of each horse is shown in the table below.

Mr. Reyes's Horses

Horse	Weight (kilograms)
Breeze	543
Flynn	519
Lady	395
Magic	486
Storm	421

Mr. Reyes is getting his horse trailer ready to bring on a trip. He has room for two horses that together weigh **less** than 900 kilograms. Which two horses could Mr. Reyes take on the trip?

A. Breeze and Magic
B. Flynn and Storm
C. Lady and Breeze
D. Storm and Lady

This item measures aspects of 3.MD.2
No Calculator
Key: D

On Saturday, a restaurant sold 174 catfish dinners. On Sunday, the restaurant sold 137 catfish dinners. Altogether, how many catfish dinners did the restaurant sell on Saturday and Sunday?

A. 201 catfish dinners
B. 211 catfish dinners
C. 301 catfish dinners
D. 311 catfish dinners

This item measures aspects of 3.NBT.2
No Calculator
Key: D

In a van, $\frac{1}{2}$ of the seats are full. The van has 8 seats. Which number shows the fraction of seats in the van that are full?

A. $\frac{1}{8}$

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

C. $\frac{4}{8}$

D. $\frac{6}{8}$

This item measures aspects of 3.NF.3b
No Calculator
Key: C

Mr. Grady bought 2 boxes of muffins. Each box has 6 muffins. Which expression shows how to find the total number of muffins Mr. Grady bought?

A. $6 \div 2$
B. $6 - 2$
C. $6 + 2$
D. 6×2

This item measures aspects of 3.OA.1
No Calculator
Key: D

Heidi bought 3 books and a bookmark. Each book cost $8, and the bookmark cost $2. Heidi spent m dollars in all. Which equation is true?

A. $m = \$10$
B. $m = \$13$
C. $m = \$24$
D. $m = \$26$

This item measures aspects of 3.OA.8
No Calculator
Key: D

Use the number line below to answer question .

What number does point A represent?

A. $\frac{1}{6}$

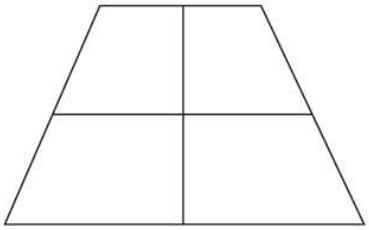
B. $\frac{4}{6}$

C. $\frac{6}{4}$

D. $\frac{4}{1}$

This item measures aspects of 3.NF.2b
No Calculator
Key: B

Sari divided the shape below into 4 parts.



She says each part is $\frac{1}{4}$ of the shape. Which statement about Sari's claim must be true?

A. She is correct because there are 4 parts.
B. She is correct because the shape has 4 sides.
C. She is not correct because the shape is a trapezoid.
D. She is not correct because the parts are not the same size.

This item measures aspects of 3.G.2
No Calculator
Key: D

Marco bought 5 ice-cream bars every week for n weeks. He bought a total of 40 ice-cream bars. He used the equation below to find out how many weeks he bought 5 ice-cream bars.

$$5 \times n = 40$$

Which is another way to show how many weeks Marco bought 5 ice-cream bars?

A. $5 \times 40 = n$
B. $5 + 40 = n$
C. $40 - 5 = n$
D. $40 \div 5 = n$

This item measures aspects of 3.OA.6
No Calculator
Key: D

Mrs. LeRoy's classroom has 6 glass tanks. Her class collected 5 frogs to put in each tank.
How many frogs did the class collect?

A. 25
B. 30
C. 35
D. 36

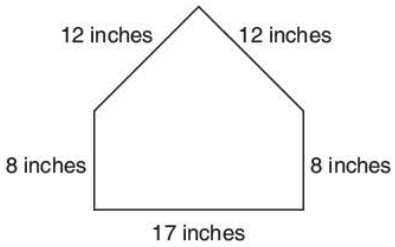
This item measures aspects of 3.OA.7
No Calculator
Key: B

Jeremy wants to build 9 model cars. He needs 4 wheels for each car. How many wheels does Jeremy need to build 9 model cars?

A. 31 wheels
B. 32 wheels
C. 36 wheels
D. 38 wheels

This item measures aspects of 3.OA.7
No Calculator
Key: C

Clay drew the diagram below.



What is the perimeter of the diagram?

A. 37 inches
B. 40 inches
C. 57 inches
D. 74 inches

This item measures aspects of 3.MD.8
Calculator
Key: C

Latrenda saw these birds flying overhead.

What fraction of the birds is white?

A. $\frac{2}{6}$

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

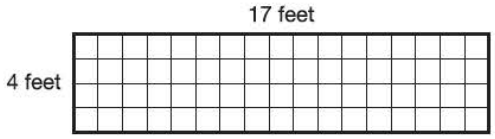
C. $\frac{6}{8}$

D. $\frac{8}{2}$

This item measures aspects of 3.NF.1
Calculator
Key: B

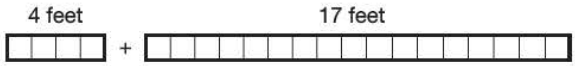
A display board in a library is shown below.

Display Board



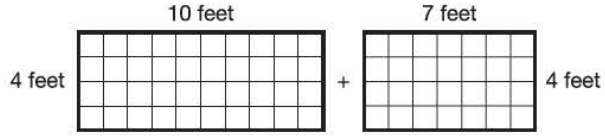
The librarian uses 2 large sheets of paper to cover the board. The sheets of paper do not overlap. The sheets of paper fit perfectly on the board. Which model shows the total amount of paper, in square feet, the librarian used?

A.

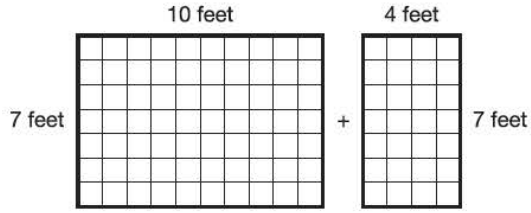


B.

C.

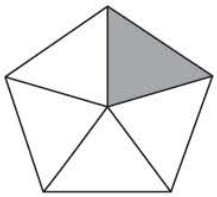


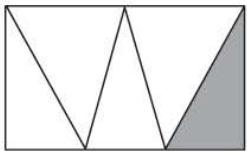
D.

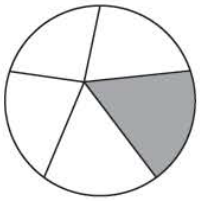


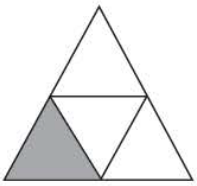
This item measures aspects of 3.MD.7c
Calculator
Key: C

Tito drew a shape and shaded $\frac{1}{5}$ of it. Which shape could be Tito's shape?

A. 

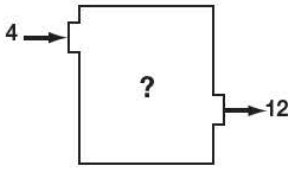
C. 

B. 

D. 

This item measures aspects of 3.G.2
Calculator
Key: A

This is Jan's number-changing machine. Each time she puts a number in the machine, the number changes in the same way.



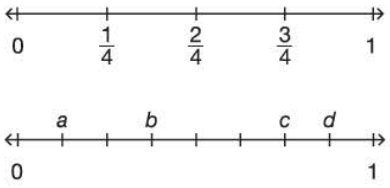
Number In	Number Out
4	12
7	15
9	17
11	19

This item measures aspects of 3.OA.9
Calculator
Key: B

Which rule explains how numbers change in Jan's machine?

A. Add 6 to the number going in.
B. Add 8 to the number going in.
C. Multiply the number going in by 3.
D. Multiply the number going in by 4.

Use the number lines below to answer question



Which equation is true?

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

B. $b = \frac{2}{4}$

C. $c = \frac{3}{4}$

D. $d = \frac{4}{4}$

This item measures aspects of 3.NF.3a
Calculator
Key: C

Hanna is placing square tiles on her floor. Each tile has a side length of 1 foot. Hanna's floor has a length of 9 feet and a width of 6 feet, as shown in the picture below.

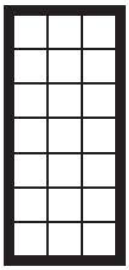
Hanna's Floor

How many tiles can Hanna fit on the floor if she places them side by side with no gaps?

A. 15
B. 30
C. 54
D. 81

This item measures aspects of 3.MD.7b
Calculator
Key: C

Donald is going to cut a piece of cardboard to fit inside this frame.



= 1 square unit

What is the area of the piece of cardboard he needs?

A. 20 square units
B. 21 square units
C. 22 square units
D. 24 square units

This item measures aspects of 3.MD.6
Calculator
Key: B

Tina made the number line below to show how far she ran yesterday.

What fraction of a mile did Tina run?

A. $\frac{1}{5}$ of a mile

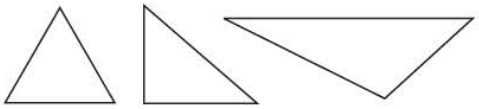
B. $\frac{3}{5}$ of a mile

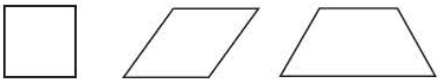
C. $\frac{3}{8}$ of a mile

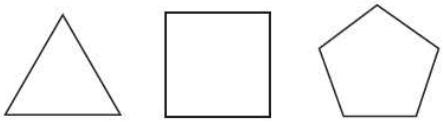
D. $\frac{5}{8}$ of a mile

This item measures aspects of 3.NF.2b
Calculator
Key: D

Which group of shapes has only quadrilaterals?

A. 

B. 

C. 

D. 

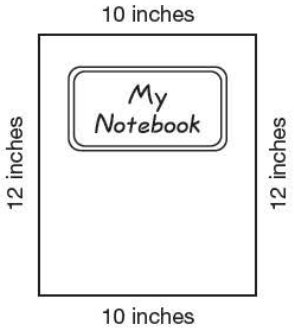
This item measures aspects of 3.G.1
Calculator
Key: B

Mr. Abbott bought 9 boxes of bookmarks for the library. There were 8 bookmarks in each box. Which number sentence can Mr. Abbott use to find the total number of bookmarks?

A. $9 + 8 = \square$
B. $9 \times 8 = \square$
C. $9 \div 8 = \square$
D. $9 - 8 = \square$

This item measures aspects of 3.OA.3
Calculator
Key: B

Henry is decorating his notebook for art class. He wants to glue colored string around the perimeter of the notebook cover.



How many inches of colored string will Henry need?

A. 22 inches
B. 24 inches
C. 42 inches
D. 44 inches

This item measures aspects of 3.MD.8
Calculator
Key: D

What is 1,327 rounded to the nearest hundred?

A. 1,300
B. 1,320
C. 1,330
D. 1,400

This item measures aspects of 3.NBT.1
Calculator
Key: A

. The chart below shows the team results of a bike race.

Bike Race Results

Robbie	6 kilometers
Brian	10 kilometers
Sue	7 kilometers
Melanie	8 kilometers

This item measures aspects of 3.MD.3
Calculator
Key: D

Which pictograph should the team use to show their results?

A.

Bike Race Results

Robbie	
Brian	
Sue	
Melanie	

= 2 kilometers

B.

Bike Race Results

Robbie	
Brian	
Sue	
Melanie	

= 2 kilometers

C.

Bike Race Results

Robbie	
Brian	
Sue	
Melanie	

= 2 kilometers

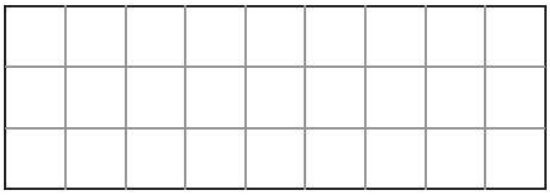
D.

Bike Race Results

Robbie	
Brian	
Sue	
Melanie	

= 2 kilometers

Greg's rectangular path made of square bricks is shown below.



Each square brick has an area of 1 square foot. Greg counts 27 bricks in the path to find the area. Which expression shows another way Greg could have found the area of the path?

A. 2×9
B. 3×9
C. $9 + 3 + 3$
D. $9 + 2 + 2$

This item measures aspects of 3.MD.7a
Calculator
Key: B

Rosa made this list of numbers using a rule.

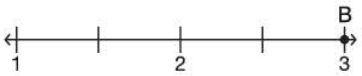
Guess My Rule
12
18
20
24
30
36

Which rule did she use to choose numbers for her list?

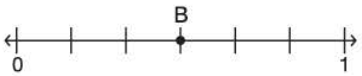
A. The numbers are all multiples of two.
B. The numbers are all multiples of five.
C. The numbers are all multiples of nine.
D. The numbers are all multiples of ten.

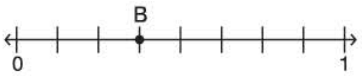
This item measures aspects of 3.OA.9
Calculator
Key: A

Maria cut a loaf of bread into 8 equal slices. She gave her brother 3 slices. Which number line uses point B to represent the fraction of the loaf Maria gave to her brother?

A. 

B. 

C. 

D. 

This item measures aspects of 3.NF.2b
Calculator
Key: D

Arnie has circled some counting-by-sevens numbers on this hundreds chart.

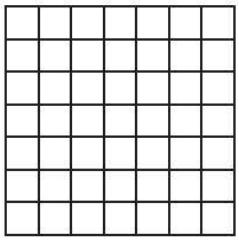
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

Counting from least to greatest, what pattern do the circled numbers make?

A. odd, odd, odd, odd
B. odd, even, odd, even
C. even, odd, even, odd
D. even, even, even, even

This item measures aspects of 3.OA.9
Calculator
Key: B

Brittany made this game board from 1-inch-square tiles.



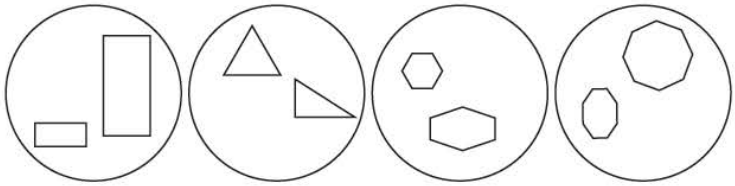
= 1 square inch

This item measures aspects of 3.MD.6
Calculator
Key: C

What is the area of the game board?

A. 28 square inches
B. 42 square inches
C. 49 square inches
D. 54 square inches

Anton sorted the shapes shown below. He has one square left.



In which set does the square belong?

A. in the set of rectangles
B. in the set of triangles
C. in the set of hexagons
D. in the set of octagons

This item measures aspects of 3.G.1
Calculator
Key: A

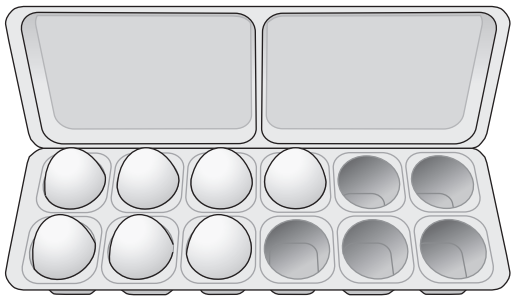
This item measures aspects of 3.NF.1
Calculator

Write your answers to question in the spaces provided. The question has more than one part. Show all the work you do to find your answers. Even if you cannot answer all parts, answer as many as you can. You may still get points for answering part of the question. Be sure to write clearly.

You MAY use a calculator for this session.

Ty is making brownies.

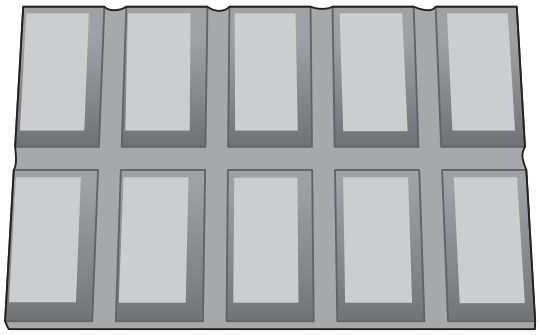
A. The recipe uses 2 eggs. The picture shows the total number of eggs Ty has.



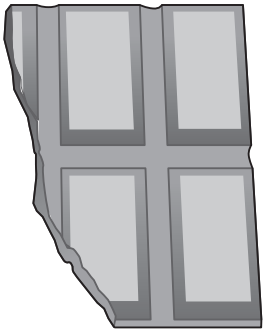
What fraction of the total number of eggs will Ty use to make the brownies? Explain your answer.

B. The recipe uses $\frac{3}{4}$ of a stick of butter. The picture below shows a stick of butter. Shade the stick of butter to show how much is used in the recipe.

C. This picture shows a bar of chocolate Ty has in his kitchen.



Ty must use some of the bar to make the brownies. He breaks off a piece of the bar. The picture below shows how much he broke off.



About what fraction of the whole bar of chocolate is the piece Ty broke off? Explain your answer.

Grade 3

Scoring Rubric	
4	The student earns 5 points.
3	The student earns 3–4 points.
2	The student earns 2 points.
1	The student earns 1 point OR demonstrates minimal understanding of the concept being measured.
0	The student's response is incorrect or irrelevant to the skill or concept being measured.
B	The student provides no response.

Sample Answer:

Part A. $\frac{2}{7}$; There are 7 eggs. Each egg is $\frac{1}{7}$ of the total number of eggs. Two eggs is $\frac{2}{7}$ of the total number of eggs.

Part B.

Part C. $\frac{4}{10}$; There are 10 squares in the bar, and the piece is about 4 squares big. One square is a little less than a whole square, but another square is a little more than a whole square, so it is about 4 altogether.

Points Assigned:

Part A. 2 points

1 point for the fraction $\frac{2}{7}$ or equivalent

AND

1 point for a correct and complete explanation

Part B. 1 point

1 point for showing approximately $\frac{3}{4}$ of the rectangle (the student does not need to draw lines marking quarters if approximately $\frac{3}{4}$ of the butter is shown)

Part C. 2 points

1 point for the fraction $\frac{4}{10}$ or equivalent

AND

1 point for a correct and complete explanation