Math
Spring Operational 2015

Grade 4
Performance Based Assessment
Released Items

M00945

1. Divide 738 by 6.

Enter your answer in the box.

VF541814

2. Mike is 3 years old. His Uncle Joe is 7 times as old as Mike.

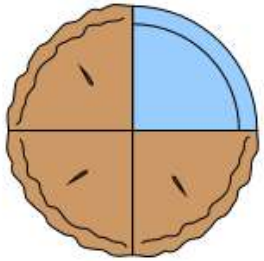
Use the numbers and symbols to find Uncle Joe's age.

Drag and drop the numbers and symbols into each correct box.

+ − × ÷ 3 7 10 21

3 =

3. Jasmine ate $\frac{1}{4}$ of a pie. She drew a model to represent the fraction of the pie that she ate.

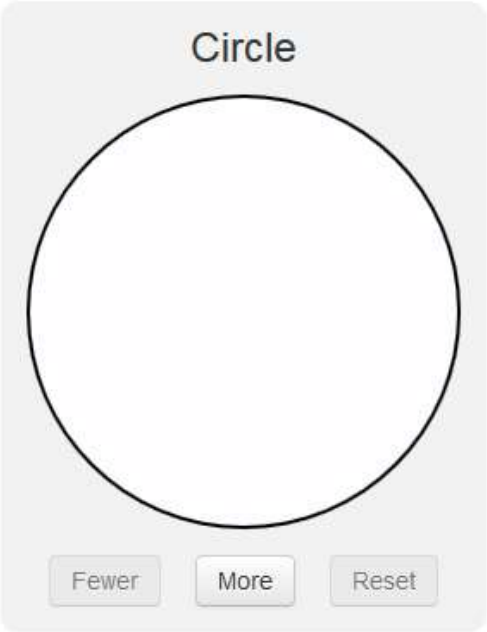


Which fraction is equivalent to the fraction of the pie that Jasmine ate?

- A. $\frac{2}{5}$
- B. $\frac{3}{6}$
- C. $\frac{2}{8}$
- D. $\frac{1}{12}$

4. Use the circle to show the result of $\frac{3}{6} + \frac{2}{6}$.

Divide the figure into the correct number of equal parts by using the More and Fewer buttons. Then shade by selecting the part or parts to represent the answer.



VF524029

5. Isabel used $\frac{2}{3}$ cup of strawberries in a fruit salad. She used less than $\frac{2}{3}$ cup of blueberries in the same salad. Which of the following could be the fraction of a cup of blueberries that Isabel used?

Select the **three** fractions that could represent the fraction of a cup of blueberries.

- ☐ A. $\frac{1}{2}$
- ☐ B. $\frac{1}{4}$
- ☐ C. $\frac{4}{5}$
- ☐ D. $\frac{5}{6}$
- ☐ E. $\frac{3}{8}$

M00074

6. An animal weighs 4 pounds. A bald eagle weighs 3 times as much as this animal. How many pounds does the bald eagle weigh?

Enter your answer in the box.

[ ]

VF492244

7. What is the expanded form of 50,210?

- A. $5{,}000 + 20 + 1$
- B. $5{,}000 + 200 + 10$
- C. $50{,}000 + 20 + 1$
- D. $50{,}000 + 200 + 10$

M01451

8. Which expressions have a value of $\frac{8}{12}$?

Select the **three** correct answers.

- A. $\frac{2}{12} + \frac{4}{12}$
- B. $\frac{6}{12} + \frac{2}{12}$
- C. $\frac{1}{12} + \frac{2}{12} + \frac{4}{12}$
- D. $\frac{3}{12} + \frac{2}{12} + \frac{2}{12} + \frac{1}{12}$
- E. $\frac{1}{12} + \frac{2}{12} + \frac{1}{12} + \frac{2}{12} + \frac{1}{12} + \frac{2}{12}$
- F. $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$

9. **Part A**

Three friends are taking turns filling a tank with water for their science teacher. Sam fills $\frac{3}{12}$ of the tank and Myra fills $\frac{4}{12}$ of it. Jeremy also takes his turn filling up the tank. After the three friends have taken their turns, the tank is $\frac{9}{12}$ full of water. How much of the tank did Jeremy fill?

$\square$

$\frac{\square}{\square}$

Part B

Three classmates have filled a water tank $\frac{9}{12}$ full of water. Their science teacher only wanted the tank to be $\frac{6}{12}$ full of water. How much of the tank will need to be drained for it to be $\frac{6}{12}$ full of water?

$\square$

$\frac{\square}{\square}$

10. **Part A**

The table shows the lengths of five different animals in a zoo. For each animal, select a place in the table to show whether it is less than or greater than $\frac{5}{10}$ meter in length.

Select one cell per row.

Animal	Length (in meters)	Less than $\frac{5}{10}$ meter	Greater than $\frac{5}{10}$ meter
Blue jay	$\frac{25}{100}$	☐	☐
Cottontail rabbit	$\frac{4}{10}$	☐	☐
Raccoon	$\frac{8}{10}$	☐	☐
Snowy owl	$\frac{67}{100}$	☐	☐
Thread snake	$\frac{11}{100}$	☐	☐

Part B

Use the lengths in the table to compare the lengths of the animals.

Select from the drop-down menus to correctly complete each comparison.

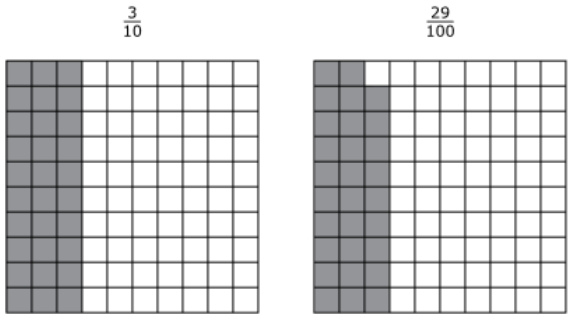
blue jay [Choose...] cottontail rabbit

- <
- >
- =

raccoon [Choose...] snowy owl

thread snake [Choose...] blue jay

11. Jessica shades two grids that each equal one whole to represent and compare the fractions $\frac{3}{10}$ and $\frac{29}{100}$.



Part A

Drag and drop the decimal that represents $\frac{3}{10}$ and the decimal that represents $\frac{29}{100}$ into each box to create a true comparison.

Answer Choices

0.03 | 0.3 | 3.1 | 0.29 | 0.92 | 2.9

[ ] < [ ]

Part B

Jessica says that $\frac{3}{10} + \frac{29}{100} = \frac{32}{100}$ because $3 + 29 = 32$ and there are 100 squares in each of the grids. Explain how you know Jessica is incorrect by using the grids or the decimal inequality you created. Then find the correct sum.

Enter your explanation and your answer in the space provided.

[A] [π]

Math symbols

+ − × ÷ (·) [·] = < > ≠ $ ° ?

12. A student's work to add the mixed numbers $1\frac{3}{4}$ and $2\frac{3}{4}$ is shown.

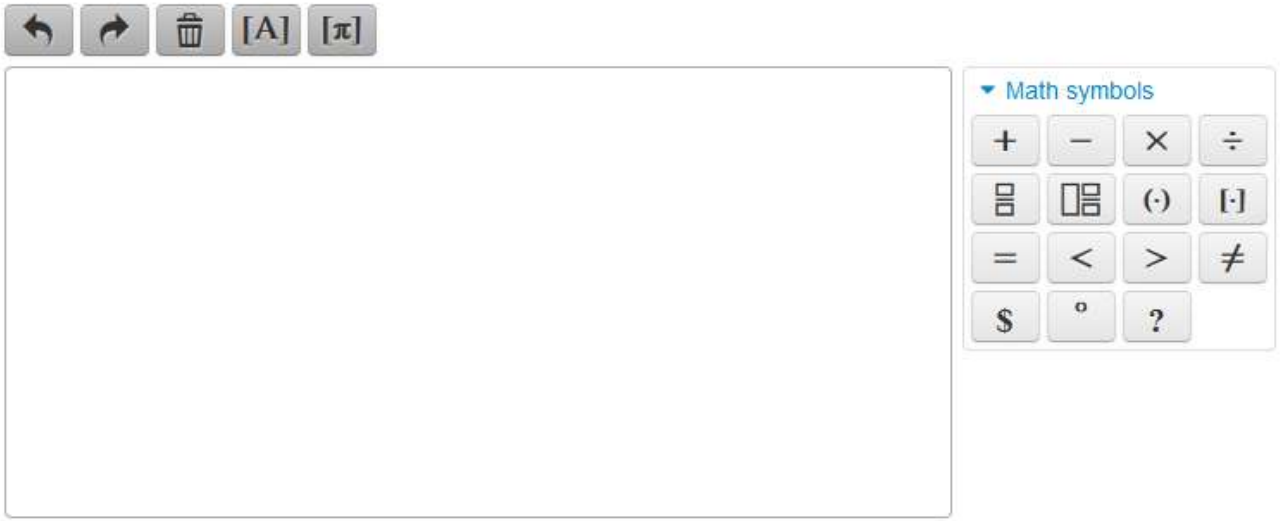
$$1\frac{3}{4}+2\frac{3}{4}=\frac{4}{4}+\frac{3}{4}+\frac{8}{4}+\frac{3}{4}$$

$$=\frac{4+3+8+3}{4+4+4+4}$$

$$=\frac{18}{16}$$

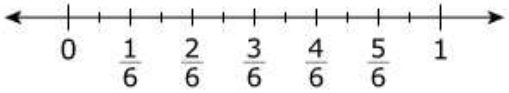
Explain any errors you see in the work. Find the correct solution. Show your work or explain your answer.

Enter your explanation, your solution, and your work or explanation in the space provided.



13. Explain how to find $2 \times \frac{5}{12}$ using the number line.

Find the product.



Enter your answer and your explanation in the space provided.

[A] [π]

Math symbols

+ − × ÷

= < > ≠

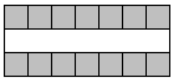
$ ° ?

14. A rectangle is shown.

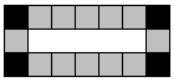
Part A

A student uses square tiles measuring 1 inch on each side to find the area of the rectangle. Her reasoning is shown.

I covered the top and bottom edges of the rectangle with 7 tiles each.



I then covered the left and right edges with 3 tiles each. I added up all the tiles I used to get a total area of 20 square inches. $7 + 7 + 3 + 3 = 20$



Identify the two errors in the student's reasoning and describe how to correctly use square tiles to find the area of the rectangle. Give the correct area of the rectangle.

Enter your answers and your description in the space provided.

Math symbols

Part B

Write a multiplication sentence that models how to find the area of the rectangle shown.

Enter your multiplication sentence in the space provided.

Math symbols

15. **Part A**

A school's art teacher needs 200 sticks of clay. An art shop donates 9 small boxes of clay and 6 large boxes of clay.

Box Size	Number of Sticks of Clay in Each Box
small	7
large	10

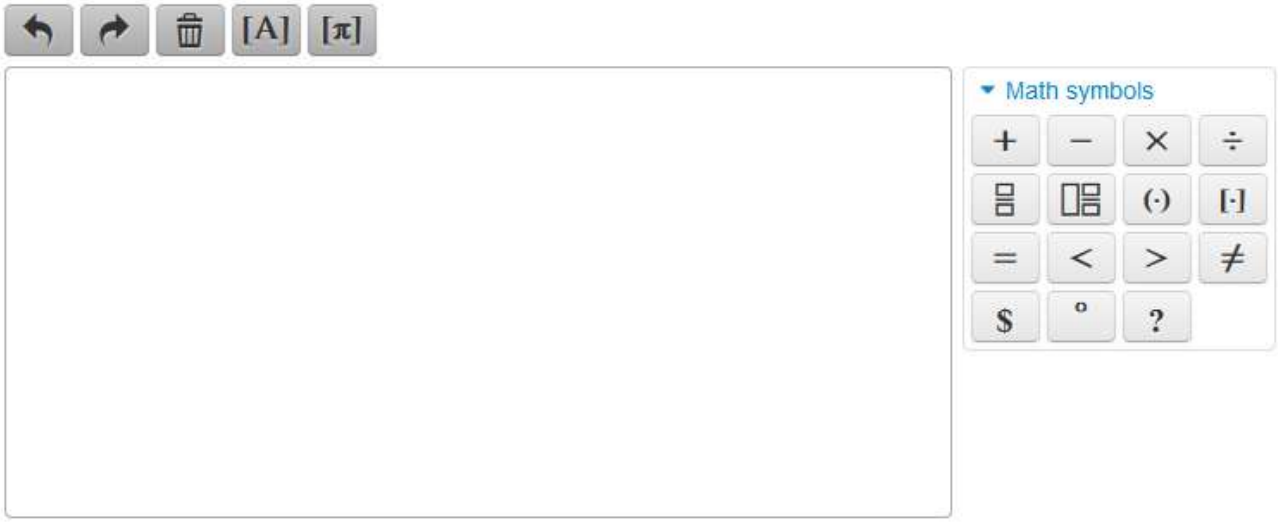
How many more sticks of clay will the art teacher need?

Enter your answer in the box.

Part B

The art teacher buys the rest of the clay he needs in large boxes. The cost of 1 large box of clay is $14. What is the total cost for these boxes of clay? Show or explain your work.

Enter your answer and your work or explanation in the space provided.

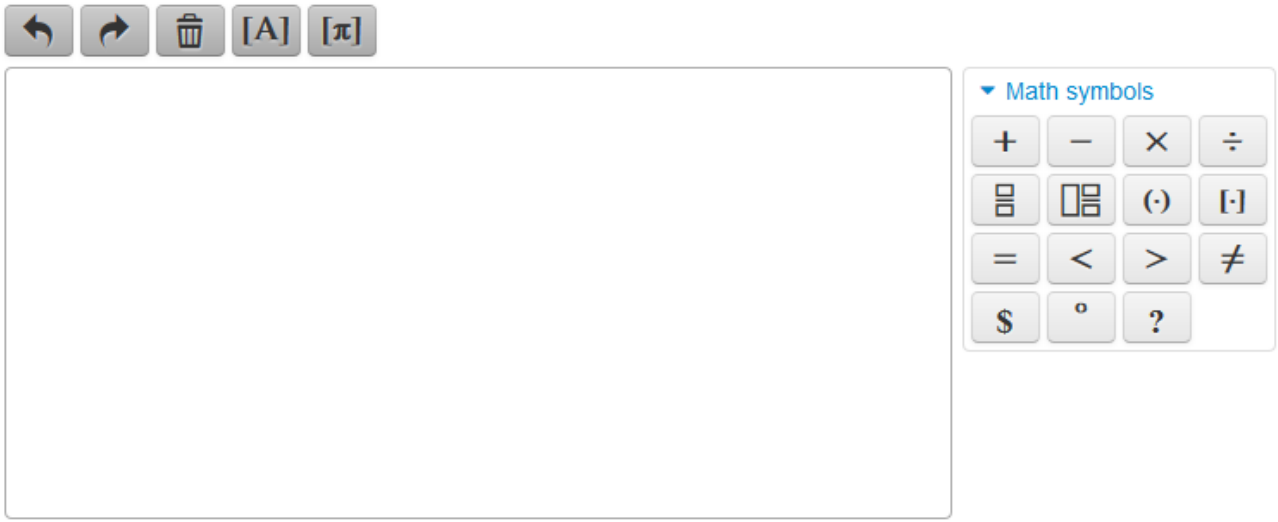


16. A student uses tubes of paint to draw on 1 poster and 2 shirts.

- The student uses 6 tubes of paint to draw on the poster.
- The number of tubes used for the poster is 3 times the number of tubes used for each shirt.
- Each tube contains $\frac{1}{3}$ ounce of paint.

How many ounces of paint does the student use for 1 shirt? How many ounces of paint does the student use to make 1 poster and 2 shirts? Show your work or explain your answers.

Enter your answers and your work or explanation in the space provided.



17. The table shows the number of baskets 4 different players made during the final game of the season.

Winter Basketball Record

Player	Number of Baskets
Tony	6
Michael	18
Scott	12
Dennis	18

Part A

Write and solve an equation that can be used to find the total number of baskets made by these 4 players.

Enter your equation and your work in the space provided.

Part B

Determine a key greater than 1 for a picture graph representing the data in the table.
Enter your answer in the box.

KEY: 1 Basketball = ☐ Baskets

Then drag and drop the basketball to complete the picture graph using your key.

Winter Basketball Record

Player	Number of Baskets
Tony	
Michael	
Scott	
Dennis	

Part C

Explain how you created the picture graph. Include reasoning for the key that you chose and how you determined the number of basketballs to place on the graph for each player.

Enter your explanation in the space provided.