



## End-of-Year Assessment

- ① The Appalachian Trail passes through 14 U.S. states, from Maine to Georgia. Use the data in the table to solve the problems given below. Lengths are rounded to the nearest mile.

State	Length of Trail (in miles)
New York	88
West Virginia	4
Maine	281
New Hampshire	161
Vermont	150
Massachusetts	90

- a. The trail in New York is how many times as long as the trail in West Virginia?

Equation with unknown: Sample answer:  $4 * t = 88$

Answer: 22 times as long

- b. Dan and Pat hiked the trail from its start in Maine, through New Hampshire, and all the way through Vermont. Pat ended his hike there, but Dan continued all the way through Massachusetts and then hiked back to the starting point in Maine. How much farther did Dan hike than Pat? **Sample answer:**

Estimate:  $(2 * (300 + 150 + 150 + 100)) - (300 + 150 + 150)$   
 $= (2 * 700) - 600 = 1,400 - 600 = 800$

Number model with unknown: Sample answer:  $(2 * (281 + 161 + 150 + 90)) - (281 + 161 + 150) = d$

Answer: 772 miles farther

Is your answer reasonable? Explain. Sample answer: Yes. My estimate was 800 miles and my answer was 772 miles, which is very close to 800.



## End-of-Year Assessment (continued)

- ② The rule for the pattern below is *multiply each counting number by 9*.  
9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, 117, 126, 135

a. Starting with  $16 \times 9$ , write the next 5 numbers in the pattern.

144, 153, 162, 171, 180

b. Describe a pattern that you see. Sample answer: The digit in the 1s place starts with 9 and counts backward to 0 and then starts over again.

- ③ a. Alexander wrote down a 6-digit whole number. When he rounded it to the hundreds place, the answer was 1,000,000. Circle the number(s) below that might have been Alexander's number.

959,999

999,957

998,945

999,999

b. Is  $9$  [100,000s] +  $5$  [10,000s] +  $9$  [1,000s] +  $9$  [100s] +  $5$  [10s] +  $9$  [1s] equivalent to any of the numbers in Problem 3a? No.

c. Select two numbers in Problem 3a and record a number sentence using  $<$ ,  $=$ , or  $>$ .

Sample answer:  $998,945 < 999,999$

d. How many times greater is the value of the 5 in 999,957 than in 998,945?

10

- ④ Solve using U.S. traditional addition or subtraction. Show your work.

a.  $52,943 + 98,761 = \underline{151,704}$

b.  $38,000 - 23,177 = \underline{14,823}$

$$\begin{array}{r}
 \phantom{+} \overset{1}{5} \overset{1}{2}, \overset{1}{9} \overset{1}{4} \overset{1}{3} \\
 + \phantom{+} \overset{1}{9} \overset{1}{8}, \overset{1}{7} \overset{1}{6} \overset{1}{1} \\
 \hline
 \phantom{+} \overset{1}{1} \overset{1}{5} \overset{1}{1}, \overset{1}{7} \overset{1}{0} \overset{1}{4}
 \end{array}$$

$$\begin{array}{r}
 \phantom{-} \overset{7}{3} \overset{9}{\cancel{8}}, \overset{9}{\cancel{0}} \overset{10}{\cancel{0}} \overset{10}{\cancel{0}} \\
 - \phantom{-} \overset{7}{2} \overset{9}{3}, \overset{9}{1} \overset{10}{7} \overset{10}{7} \\
 \hline
 \phantom{-} \overset{7}{1} \overset{9}{4}, \overset{9}{8} \overset{10}{2} \overset{10}{3}
 \end{array}$$



## End-of-Year Assessment (continued)

- 5 Solve. Show your work in the space provided.

<p>a. <math>38 * 27 = \underline{1,026}</math>  <b>Sample answer:</b></p> $  \begin{array}{r}  38 \\  * 27 \\  \hline  600 \\  210 \\  160 \\  + 56 \\  \hline  1,026  \end{array}  $	<p>b. <math>7,065 \div 9 = \underline{785}</math>  <b>Sample answer:</b></p> $  \begin{array}{r}  9 \overline{)7065} \\  \underline{-6300} \quad \mathbf{700} \\  765 \\  \underline{-720} \quad \mathbf{80} \\  45 \\  \underline{-45} \quad \mathbf{5} \\  0 \quad \mathbf{785}  \end{array}  $
---	---

- 6 Joel's dishwasher uses about 7 gallons of water each time he uses it. He ran his dishwasher every day for several weeks, using a total of 217 gallons of water.

a. For how many days did Joel use his dishwasher?

Answer: 31 days

b. How many quarts of water were used all together? 868 quarts



## End-of-Year Assessment (continued)

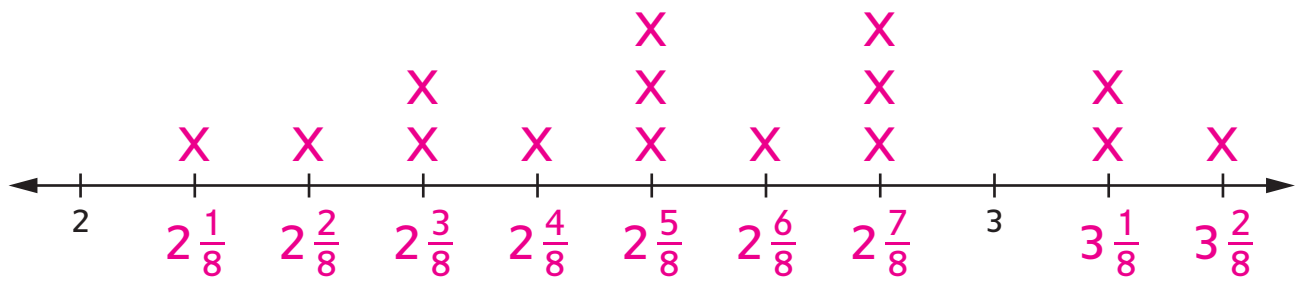
- 7 Maricella measured the wingspans of several different dragonflies to the nearest  $\frac{1}{8}$  inch. Below are the measures she recorded:

$2\frac{7}{8}$ ,  $2\frac{5}{8}$ ,  $2\frac{1}{2}$ ,  $2\frac{3}{4}$ ,  $2\frac{5}{8}$ ,  $2\frac{3}{8}$ ,  $2\frac{3}{8}$ ,  $3\frac{1}{8}$ ,  $2\frac{7}{8}$ ,  $2\frac{7}{8}$ ,  $3\frac{1}{8}$ ,  $3\frac{1}{4}$ ,  $2\frac{1}{8}$ ,  $2\frac{1}{4}$ ,  $2\frac{5}{8}$

- a. Plot the data on the line plot below.

Include a title and label the horizontal axis.

Title: Sample answer: Dragonfly Wingspans



Sample answer: Wingspans in Inches

Use the line plot to answer the following questions.

Show your work in the space provided.

- b. What is the combined length of the wingspan measures that are greater than  $2\frac{1}{8}$  inches and less than  $2\frac{5}{8}$  inches?  $8\frac{12}{8}$  in.  
or  $9\frac{4}{8}$ , or  $9\frac{1}{2}$

- c. What is the difference between the longest and shortest wingspans?  $1\frac{1}{8}$  in.



## End-of-Year Assessment (continued)

- 8 a. Write  $<$ ,  $=$ , or  $>$ .

$$\frac{8}{10} \underline{\quad} = \frac{4}{5}$$

Whole
red circle

- b. Explain how you know your answer to Problem 8a is correct.

Sample answer: If you multiply the numerator

and denominator of  $\frac{4}{5}$  by 2, it equals  $\frac{8}{10}$ .

Sample answer:

3

- c.  $\frac{3}{12} < \frac{1}{2}$

- d. Explain how you know your answer to Problem 8c is correct.

Sample answer:  $\frac{3}{12}$  is equivalent to  $\frac{1}{4}$ , and  $\frac{1}{4}$  is only half as much as  $\frac{1}{2}$ .

- 9 a. Calvin adds 3 fractions to get an answer of  $\frac{1}{2}$ .  
What might his equation be?

Sample answers:

Equation:  $\frac{1}{4} + \frac{1}{8} + \frac{1}{8} = \frac{4}{8} = \frac{1}{2}$ ;  $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{3}{6} = \frac{1}{2}$

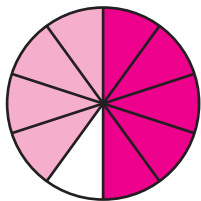
- b. Evan subtracts 2 fractions to get an answer of  $\frac{3}{4}$ .  
What might his equation be?

Equation: Sample answers:  $\frac{4}{4} - \frac{1}{4} = \frac{3}{4}$ ;  $\frac{7}{8} - \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$

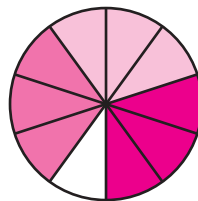
- 10 Decompose, or break down,  $\frac{9}{10}$  into two different sums of fractions with the same denominator. Record each decomposition with an equation. Then justify each decomposition by coloring the parts of the circle.

a. Equation:  $\frac{4}{10} + \frac{5}{10} = \frac{9}{10}$

b. Equation:  $\frac{3}{10} + \frac{3}{10} + \frac{3}{10} = \frac{9}{10}$



Sample answers given.





## End-of-Year Assessment (continued)

11

Whole

grid

- a. Write seven-tenths as a decimal and as a fraction.

Decimal: 0.7

Fraction:  $\frac{7}{10}$

- b. Write  $\frac{7}{100}$  as a decimal and in words.

Decimal: 0.07

Words: seven-hundredths

- c. Write a number sentence using  $<$ ,  $=$ , or  $>$  to compare the decimals in Problems 11a and 11b.  $0.7 > 0.07$  or  $0.07 < 0.7$

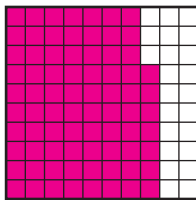
- d. Explain how you know your number sentence for Problem 11c is correct.

Sample answer: If you think of coloring in a hundredths grid, 0.07 is only 7 squares, but 0.7 is 70 squares.

- e. Add the fractions from Problems 11a and 11b. Show your work.

Answer:  $\frac{77}{100}$

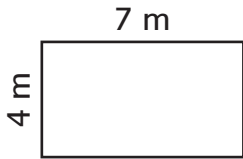
- f. Color part of the grid to show your answer to Problem 11e.





## End-of-Year Assessment (continued)

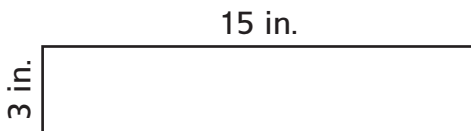
- 12 Use a formula to find the perimeter of the rectangle.  
Show your work in the space provided.



Perimeter: 22 meters

Number sentence with unknown: Sample answer:  $(2 * 7) + (2 * 4) = p$

- 13 Use a formula to find the area of the rectangle.  
Show your work in the space provided.



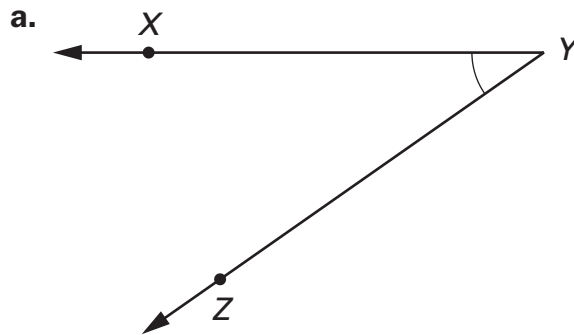
Area: 45 square inches

Number sentence with unknown:  $3 * 15 = a$



## End-of-Year Assessment (continued)

- 14 Use a protractor to complete the following.



- b. Draw an angle with a measure of  $150^\circ$ .



Measure of  $\angle XYZ$ : 35  $^\circ$

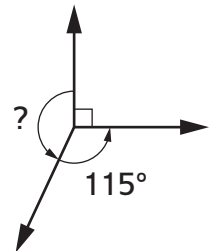
- c. Is  $\angle XYZ$  acute, right, or obtuse? Acute

Explain. Its measure is less than  $90^\circ$ .

- 15 Find the unknown angle measure. **Sample answer:**

Do not use a protractor.

Equation with unknown:  $360 - (90 + 115) = a$



Answer: 155  $^\circ$

- 16 Draw an example of each object in the boxes.

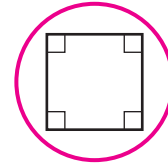
line 	point 	obtuse angle <b>Sample answer:</b> 
ray 	acute angle <b>Sample answer:</b> 	line segment 





## End-of-Year Assessment (continued)

17



- a. Circle the polygon that has:  
2 pairs of parallel sides  
4 right angles

Name: Sample answer: square

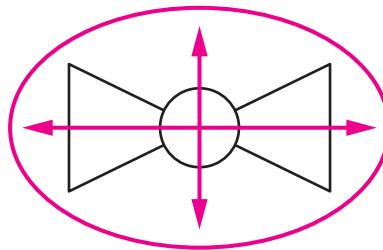
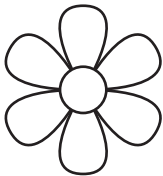
- b. Draw an "X" over the polygon that has:  
1 pair of perpendicular sides  
1 right angle **Sample**

Name: answer: right triangle

18

Amy drew a shape and showed it to her teacher.  
Her teacher said the shape had exactly 2 lines of symmetry.

- a. Circle the shape below that might have been the one Amy drew.



- b. Draw the 2 lines of symmetry on Amy's shape.  
c. Explain how you know which shape is Amy's.

Sample answer: If you folded Amy's shape along either of the 2 lines I drew, the 2 halves would match up perfectly. The heart has only 1 line of symmetry, and the flower has more than 2.



## End-of-Year Assessment (continued)

19 Solve the number stories.

- a. Polly wants to make strawberry lemonade for 8 of her friends. She wants each friend to get  $\frac{1}{4}$  of a liter of lemonade. How many liters of lemonade should she make?

Number model with unknown: Sample answer:  $8 * \frac{1}{4} = s$

Answer:  $\frac{8}{4}$ , liter(s)  
or 2

- b. Kerry and Zach just moved into a new house. They are painting all the walls new colors. If they paint  $\frac{2}{3}$  of a wall each day, how many walls will they have painted in 4 days?

Number model with unknown: Sample answer:  $4 * \frac{2}{3} = w$

Answer:  $\frac{8}{3}$ , wall(s)  
or  $2\frac{2}{3}$