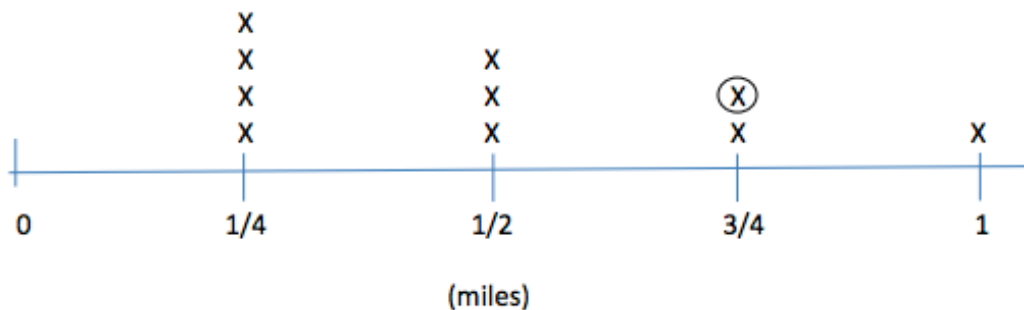


## Module 4 Application Problems

1. The following line plot shows the growth of 10 bean plants on their second week after sprouting.



- a. What was the measurement of the shortest plant?
  - b. How many plants measure 2  $\frac{1}{2}$  inches?
  - c. What is the measure of the tallest plant?
  - d. What is the difference between the longest and shortest measurement?
2. The line plot shows the number of miles run by Noland in his PE class last month, rounded to the nearest quarter mile.



- a. If Noland ran once a day, how many days did he run?
- b. How many miles did Noland run altogether last month?
- c. Look at the circled data point. The actual distance Noland ran that day was at least \_\_\_ mile and less than \_\_\_ mile.

3. Hudson is choosing a seat in art class. He scans the room and sees a 4-person table with 1 bucket of art supplies, a 6-person table with 2 buckets of supplies, and a 5-person table with 2 buckets of supplies.

Which table should Hudson choose if he wants the largest share of art supplies? Support your answer with pictures.

4. Four grade-levels need equal time for indoor recess, and the gym is available for three hours.
- How many hours of recess will each grade level receive? Draw a picture to support your answer.
  - How many minutes?
  - If the gym could accommodate two grade-levels at once, how many hours of recess would each grade-level get?

#### 5. No Application Problem

6. Olivia is half the age of her brother, Adam. Olivia's sister, Ava, is twice as old as Adam. Adam is 4 years old.

How old is each sibling? Use tape diagrams to show your thinking.

7. Mr. Peterson bought a case (24 boxes) of fruit juice. One-third of the drinks were grape and two-thirds were cranberry.

How many boxes of each flavor did Mr. Peterson buy? Show your work using a tape diagram or an array.

8. Sasha organizes the art gallery in her town's community center. This month she has 24 new pieces to add to the gallery. Of the new pieces,  $\frac{1}{6}$  of them are photographs and  $\frac{2}{3}$  of them are paintings.

How many more paintings are there than photos?

9. There are 42 people at a museum. Two-thirds of them are children.

How many children are at the museum?

Extension: If 13 of the children are girls, how many more boys than girls are at the museum?

10. Bridget has \$240. She spent  $\frac{3}{5}$  of her money and saved the rest.

How much more money did she spend than save?

11. No Application Problem

12.

Complete the table.

$\frac{2}{3}$ yds	_____ feet
4 pounds	_____ ounces
8 tons	_____ pounds
$\frac{3}{4}$ gallon	_____ quarts
$\frac{5}{12}$ year	_____ months
$\frac{4}{5}$ hour	_____ minutes

13. No Application Problem

14. Solve by drawing an area model and writing a multiplication sentence.

Beth had  $\frac{1}{4}$  box of candy. She ate  $\frac{1}{2}$  of the candy. What fraction of the whole box does she have left?

Extension: If Beth decides to refill the box, what fraction of the box would need to be refilled?

15. Kendra spent  $\frac{1}{5}$  of her allowance on a book and  $\frac{2}{5}$  on a snack. If she had four dollars remaining after purchasing a book and snack, what was the total amount of her allowance?

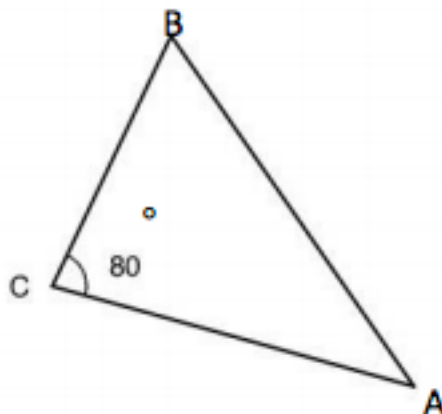
16. No Application Problem

17. Ms. Casey grades 4 tests during her lunch. She grades  $\frac{1}{3}$  of the remainder after school. If she still has 16 tests to grade after school, how many tests are there?

18. An adult female gorilla is 1.4 meters tall when standing upright. Her daughter is  $\frac{3}{10}$  as tall.

How much more will the young female gorilla need to grow before she is as tall as her mother?

19. Angle A of a triangle is  $\frac{1}{2}$  the size of angle C. Angle B is  $\frac{3}{4}$  the size of angle C. If angle C measures 80 degrees, what are the measures of angle A and angle B?



20. A recipe calls for  $\frac{3}{4}$  lb of cream cheese. A small tub of cream cheese at the grocery store weighs 12 oz.

Is this enough cream cheese for the recipe?

21. Carol had  $\frac{3}{4}$  yard of ribbon. She wanted to use it to decorate two picture frames. If she uses half the ribbon on each frame, how many feet of ribbon will she use for one frame? Use a tape diagram to show your thinking.

22. In order to test her math skills, Isabella's father told her he would give her  $\frac{6}{8}$  of a dollar if she could tell him how much money that is and what that amount is in decimal form. What should Isabella tell her father? Show your calculations.

23. Jasmine took  $\frac{2}{3}$  as much time to take a math test as Paula. If Paula took 2 hours to take the test, how long did it take Jasmine to take the test? Express your answer in minutes.

24. No Application Problem

25. The label on a 0.118-liter bottle of cough syrup recommends a dose of 10 milliliters for children aged 6 to 10 years.

How many 10-mL doses are in the bottle?

26. A race begins with  $2\frac{1}{2}$  miles through town, continues through the park for  $2\frac{1}{3}$  miles, and finishes at the track after the last  $\frac{1}{6}$  mile. A volunteer is stationed every quarter mile and at the finish line to pass out cups of water and cheer on the runners.

How many volunteers are needed?

**27. No Application Problem**

**28. No Application Problem**

**29. Fernando bought a jacket for \$185 and sold it for  $1\frac{1}{2}$  times what he paid. Marisol spent  $\frac{1}{5}$  as much as Fernando on the same jacket, but sold it for  $\frac{1}{2}$  as much as Fernando sold it for.**

**How much money did Marisol make? Explain your thinking using a diagram.**

**30. Alexa claims that  $16 \div 4$ ,  $\frac{32}{8}$ , and 8 halves are all equivalent expressions. Is Alexa correct? Explain how you know.**

**31. A café makes ten 8-ounce fruit smoothies. Each smoothie is made with 4 ounces of soy milk and 1.3 ounces of banana flavoring. The rest is blueberry juice.**

**How much of each ingredient will be necessary to make the smoothies?**

**32. Four baby socks can be made from  $\frac{1}{3}$  skein of yarn.**

**How many baby socks can be made from a whole skein? Draw a number line to show your thinking.**

**33. No Application Problem**