

Additional Practice 7-12

Model with Math

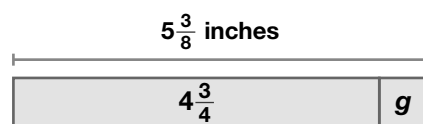
Another Look!

Each Monday in science class, students measure the height of their plants. In week 3, Andrew's plant was $4\frac{3}{4}$ inches tall. In week 4, his plant was $5\frac{3}{8}$ inches tall. How much had the plant grown from week 3 to week 4?

Tell how you can use math to model the problem.

- I can use math I know to help solve the problem.
- I can use bar diagrams and equations to represent and solve this problem.

Draw a bar diagram and write an equation to solve.



$$4\frac{3}{4} + g = 5\frac{3}{8}$$

$$\begin{array}{r} 5\frac{3}{8} = 4\frac{11}{8} \\ - 4\frac{3}{4} = 4\frac{6}{8} \\ \hline \frac{5}{8} \end{array}$$

The plant grew $\frac{5}{8}$ inch.

When you model with math, you use the math you know to solve new problems.



Model with Math

Mrs. Lohens made curtains for her children's bedrooms. She used $4\frac{3}{4}$ yards of fabric for Nicky's room and $6\frac{5}{8}$ yards for Linda's room. How much fabric did she use in all?

1. Draw a diagram and write an equation to represent the problem.

Sample answer:
y yards



$$y = 4\frac{3}{4} + 6\frac{5}{8}$$

2. Solve the equation. What fraction computations did you do?

$$y = 11\frac{3}{8}; \text{ I added: } 4\frac{3}{4} + 6\frac{5}{8} = 4\frac{6}{8} + 6\frac{5}{8} = 10\frac{11}{8} = 11\frac{3}{8}$$

3. How much fabric did Mrs. Lohens use for the curtains?

$11\frac{3}{8}$ yards





Performance Task

Fans in the Bleachers

In the bleachers at the basketball game, $\frac{1}{4}$ of the fans are adult men, and $\frac{5}{12}$ are adult women. What fraction of the fans are adults? What fraction of the fans are children?

4. **Make Sense and Persevere** What do you know and what do you need to find?

$\frac{1}{4}$ of the fans are men, and $\frac{5}{12}$ are women. What fraction are adults; What fraction are children.

5. **Reasoning** What quantities and operations will you use to find the fraction of the fans that are adults? that are children?

To find the fraction of fans that are adults, add $\frac{1}{4} + \frac{5}{12}$. To find the fraction that are children, subtract the sum from 1.

6. **Critique Reasoning** Phyllis says you have to know the number of fans in order to determine the fraction of the fans that are children. Is she right? Explain.

No. Sample explanation: The whole, 1, is the sum of the fractions for adults and for children. Subtract the fraction for adults from 1 to find the fraction for children.

7. **Model with Math** Draw a diagram and use an equation to help you find the fraction of the fans that are adults. Then draw a diagram and use an equation to help you find the fraction of the fans that are children.

Sample answer:



$$a = \frac{1}{4} + \frac{5}{12} =$$

$$\frac{3}{12} + \frac{5}{12} = \frac{8}{12} = \frac{2}{3}$$

$$a = \frac{2}{3}$$

$\frac{2}{3}$ of the fans are adults.



$$c = 1 - \frac{2}{3} =$$

$$\frac{3}{3} - \frac{2}{3} = \frac{1}{3}$$

$$c = \frac{1}{3}$$

$\frac{1}{3}$ of the fans are children.

When you model with math, you decide what steps need to be completed to find the final answer.

