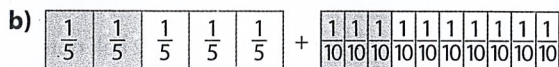
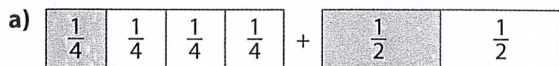


Practise

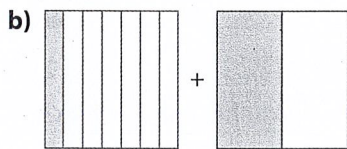
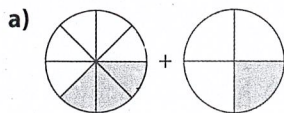
For help with #1 to #4, refer to Example 1 on pages 109–110.

For help with #6 to #9, refer to Example 2 on pages 111–112.

1. Write each addition statement shown by the fraction strips. Add, and then estimate to check that your answer is reasonable.



2. For each diagram, write an addition statement. Then add.



3. Add. Write your answers in lowest terms.

a) $\frac{2}{5} + \frac{1}{10}$

b) $\frac{5}{8} + \frac{1}{4}$

c) $\frac{1}{3} + \frac{5}{12}$

d) $\frac{1}{4} + \frac{3}{5}$

e) $\frac{1}{2} + \frac{1}{5}$

f) $\frac{3}{8} + \frac{1}{6}$

4. Determine the sum. Write your answers in lowest terms.

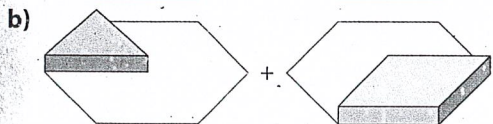
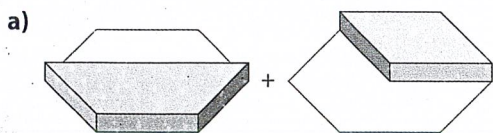
a) $\frac{1}{2} + \frac{3}{8}$

b) $\frac{1}{12} + \frac{5}{6}$

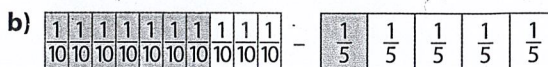
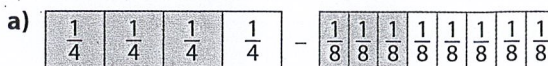
c) $\frac{1}{6} + \frac{3}{4}$

d) $\frac{1}{3} + \frac{2}{9}$

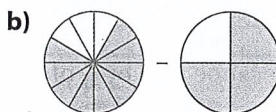
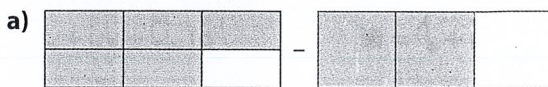
5. Write each addition statement shown by the pattern blocks. Then add.



6. Write each subtraction statement shown by the fraction strips. Subtract, and then estimate to check that your answer is reasonable.



7. For each diagram, write a subtraction statement. Then subtract.



8. Subtract. Write your answers in lowest terms.

a) $\frac{3}{5} - \frac{3}{10}$

b) $\frac{5}{6} - \frac{1}{2}$

c) $\frac{1}{2} - \frac{1}{10}$

d) $\frac{7}{8} - \frac{1}{2}$

e) $\frac{2}{3} - \frac{2}{5}$

f) $\frac{5}{8} - \frac{5}{12}$

9. Determine the difference. Write your answers in lowest terms.

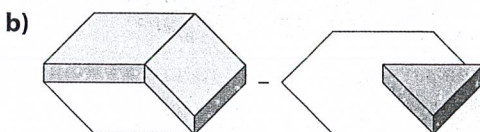
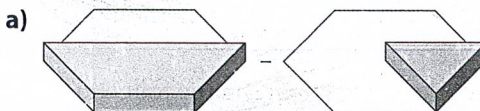
a) $\frac{2}{3} - \frac{1}{2}$

b) $\frac{11}{12} - \frac{1}{6}$

c) $\frac{2}{5} - \frac{1}{4}$

d) $\frac{1}{6} - \frac{1}{9}$

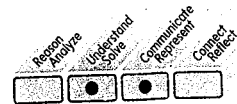
10. Write each subtraction statement shown by the pattern blocks. Then subtract.



Apply

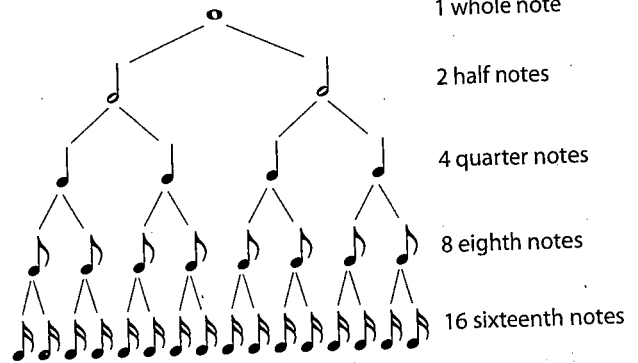
11. Competency Check

- a) Describe a situation in which you would need to solve $\frac{1}{4} + \frac{1}{2}$.
 b) Create a diagram to model this situation. Compare your answer with a classmate's.



12. Why is it difficult to solve $\frac{1}{2} - \frac{1}{8}$ without using a common denominator?

13. Musicians use mathematics when defining notes. The duration of a note can be broken into equal parts of a whole note. The note tree shows the length of various notes. Use the musical note tree to determine each sum or difference.



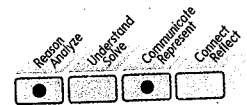
- a) $\text{quarter note} + \text{quarter note} = \blacksquare$ b) $\text{quarter note} + \text{quarter note} + \text{quarter note} = \blacksquare$
 c) $\text{quarter note} - \text{quarter note} = \blacksquare$ d) $\text{quarter note} - \text{eighth note} = \blacksquare$

14. Zach was leading in a canoe race by $\frac{5}{8}$ of a length. He won the race by $\frac{1}{2}$ a length. By how much did the second-place canoeer catch up by the end of the race?

15. A friend shows you the following work for an addition problem:

$$\frac{1}{4} + \frac{1}{3} = \frac{2}{7}$$

- a) Explain the error in your friend's work.
 b) Determine the correct answer.



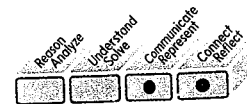
16. An electrician is installing wiring for a home automation system. She uses $\frac{1}{6}$ of the roll of data cable in one room and then $\frac{1}{3}$ of the roll in a second room. How much of the roll of data cable is left?

17. Earth is made up of four basic layers: crust, mantle, outer core, and inner core. $\frac{1}{200}$ is the crust, $\frac{9}{20}$ is the mantle, $\frac{7}{20}$ is the outer core, and $\frac{1}{5}$ is the inner core. What is the difference in size between the crust and mantle combined and the outer and inner cores combined?

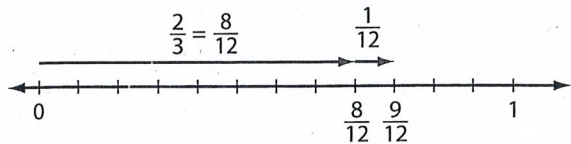
18. Mr. Jackson shows Gosha the following fraction statement:

$$\frac{3}{4} h + \frac{1}{12} h = 50 \text{ min}$$

Gosha says the statement means 45 minutes plus another 5 minutes is 50 minutes in total. Explain why you agree or disagree with Gosha.



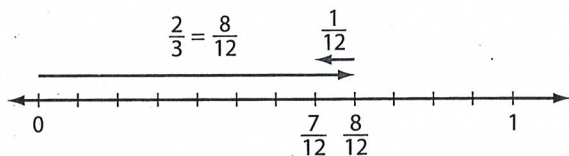
19. You can use a number line to show $\frac{2}{3} + \frac{1}{12} = \frac{9}{12}$.



Draw number lines to add the fractions.

- a) $\frac{1}{8} + \frac{1}{4}$ b) $\frac{1}{2} + \frac{1}{8}$ c) $\frac{1}{4} + \frac{1}{2} + \frac{1}{8}$

20. You can use a number line to show $\frac{2}{3} - \frac{1}{12} = \frac{7}{12}$.

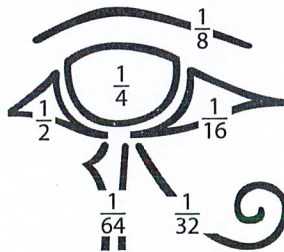


Draw number lines to subtract fractions.

- a) $\frac{1}{2} - \frac{1}{8}$ b) $\frac{1}{4} - \frac{1}{12}$ c) $\frac{11}{12} - \frac{1}{4} - \frac{1}{6}$

Extend

21. The ancient Egyptians thought the fractions in the Eye of Horus added up to 1. Were they correct? Show your work.

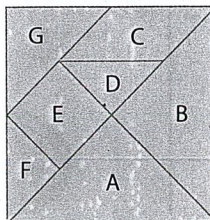


22. The sum of each row, column, and diagonal in this magic square must equal 1. Copy the square and fill in the blanks.

■	■	$\frac{5}{12}$
$\frac{7}{12}$	$\frac{1}{3}$	■
$\frac{1}{4}$	■	■

23. A tangram is a square puzzle that is divided into seven shapes.

- What fraction of the square is each piece?
- What is the sum of A and B?
- Subtract the value of D from the whole.
- Which two tangram pieces add up to the value of C?
- Make a problem of your own using tangram pieces. Have a classmate solve it.



24. Is it possible to add any two fractions? Use an example to explain why or why not.

