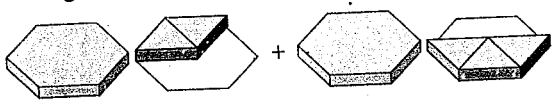
Practise

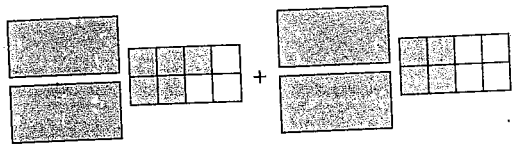
For help with #1 to #3, refer to Example 1 on pages 116–117.

1. Write and solve the addition statement for each diagram.

a)



b)



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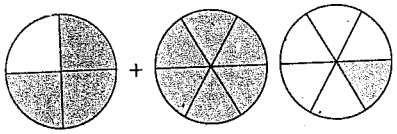
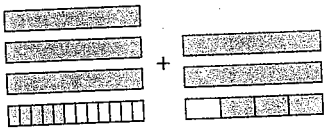


d)



2. Determine the sum. Express your answer as a mixed number in lowest terms. Estimate to check if your answer is reasonable.

a) $3\frac{1}{8} + 5\frac{5}{8}$

b) $2\frac{2}{5} + 1\frac{4}{5}$

c) $\frac{12}{7} + \frac{7}{5}$

d) $3\frac{1}{2} + 3\frac{2}{5}$

e) $1\frac{3}{4} + 3\frac{5}{6}$

f) $\frac{7}{3} + 2\frac{2}{5}$

3. Add. Write your answers in lowest terms.

a) $2\frac{5}{6} + 3\frac{1}{3}$

b) $1\frac{2}{3} + 1\frac{3}{4}$

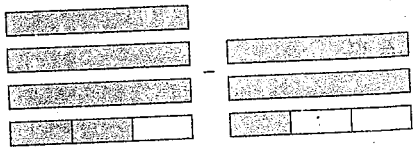
c) $2\frac{1}{7} + 4\frac{2}{7}$

d) $4\frac{3}{10} + 7\frac{1}{2}$

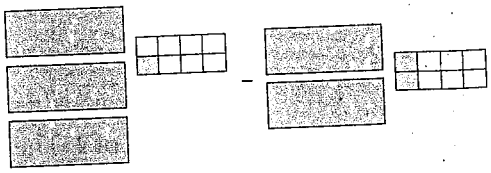
For help with #4 to #6, refer to Example 2 on pages 118–119.

4. Write and solve the subtraction statement for each diagram.

a)



b)



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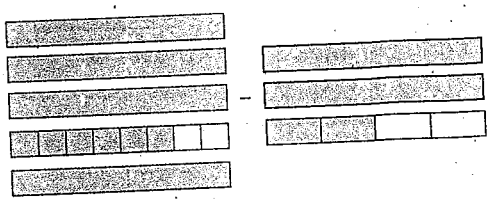
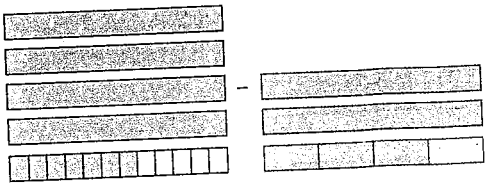


d)



5. Subtract. Express your answer as a mixed number in lowest terms. Estimate to check if your answer is reasonable.

a) $4\frac{4}{9} - 3\frac{1}{9}$

b) $3\frac{1}{4} - 1\frac{1}{4}$

c) $5\frac{2}{7} - 1\frac{5}{7}$

d) $6\frac{7}{10} - 3\frac{2}{5}$

e) $5\frac{5}{9} - 2\frac{2}{3}$

f) $\frac{7}{3} - 1\frac{1}{5}$

6. Subtract. Write your answers in lowest terms.

a) $2\frac{4}{5} - 1\frac{3}{5}$

b) $4\frac{3}{4} - 2\frac{1}{3}$

c) $2\frac{1}{10} - \frac{3}{5}$

d) $3\frac{4}{5} - 1\frac{3}{7}$

Apply

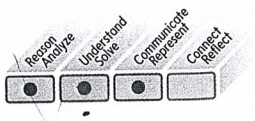
7. The painters finished painting $1\frac{3}{4}$ rooms before lunch. After lunch, they finished another $2\frac{1}{4}$ rooms. How many rooms in total did they paint?

8. Leanne is learning a new dance routine. On Saturday, she rehearsed for $1\frac{2}{3}$ h. On Sunday, she rehearsed for $2\frac{1}{4}$ h. How long did Leanne spend rehearsing this weekend?

9. After $2\frac{2}{5}$ h, a baseball game was almost over when the score became tied. The extra innings extended the total playing time to $4\frac{1}{4}$ h. How long did the extra innings take?

10. Ben ran $1\frac{5}{12}$ laps for gym class. Mei ran $\frac{18}{12}$ laps. Ben said he ran farther than Mei. Who ran farther and by how much?

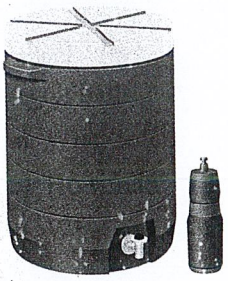
11. ✓ **Competency Check** After dinner, $1\frac{1}{2}$ ham sandwiches and $2\frac{3}{4}$ egg salad sandwiches are left. Jeremy and his sister want to use 4 of the leftover sandwiches for their lunches tomorrow. What advice would you give them to prepare for their lunches? How would you justify your advice in a way they can understand?



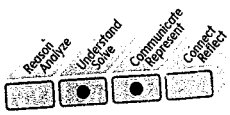
12. Karen goes to swimming practice for $1\frac{1}{3}$ h each day. In the morning, she has $\frac{2}{3}$ h of practice. How many hours of practice does she have in the afternoon?

13. After Jack's party, $2\frac{3}{4}$ bottles of juice are left. He wants to take $\frac{1}{2}$ a bottle on a hike the next day, but his family drinks $2\frac{1}{4}$ bottles before he can tell them. Will Jack have enough to take on his hike? Justify your answer using two different methods.

14. A large drink cooler has enough sports drink to fill $9\frac{3}{4}$ drinking bottles for a team of soccer players. Halfway through practice, the players drink $4\frac{7}{8}$ bottles of sports drink. Will there be enough sports drink in the cooler to finish the soccer practice? Justify your answer.



15. Julia needs $3\frac{1}{2}$ sheets of plywood to finish a wall in a workshop. She has $1\frac{1}{3}$ sheets of plywood.

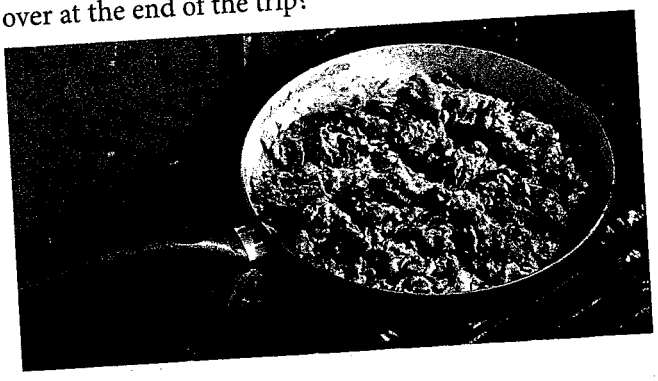


a) How much more does she need? Include fraction diagrams with your answer.

b) How many additional sheets of plywood would you recommend that she buy?

16. Chef Dimitri needs 4 trays of spanakopita, or spinach pie, cut into pieces for a private party. He finished cutting $1\frac{1}{4}$ trays of spanakopita before his break and another $2\frac{2}{3}$ trays after his break. Does he have enough spanakopita for the party? Justify your answer.

17. On a school camping trip, the cook uses $1\frac{1}{2}$ dozen eggs to make pancakes. He uses another $3\frac{1}{3}$ dozen for scrambled eggs. How many dozen eggs does he use altogether? If he brought 60 eggs for the trip, how many does he have left over at the end of the trip?



Extend

18. Melissa is in training for a rowing competition. She keeps track of the hours she practises. At the end of the week, she totals her hours.

Hours Practised						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
0	$1\frac{3}{4}$	$2\frac{1}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$

a) This week her goal was to practise at least 10 h. How can you tell if she met her goal without adding the total number of hours?

b) By how many hours was she over or under her goal?

19. Daniel may use the computer for 3 h each weekend. He uses it for $\frac{1}{2}$ h on Saturday morning, $1\frac{1}{4}$ h on Saturday night, and $\frac{3}{4}$ h on Sunday morning. For how much time can Daniel use the computer on Sunday night?

20. Suppose you had to write the story of your typical day using fractions. What would the story say? How much time would you spend on each activity?

21. The Babylonian system of numbers was based on 60, not 10. Babylonian fractions were expressed as numbers out of 60, such as $\frac{2}{60}$, $\frac{3}{60}$, $\frac{5}{60}$, and $\frac{12}{60}$. Many things we use today come from the Babylonian times. Our clock is based on the number 60. You can write the time as a fraction out of 60 min. For example, 9:10 a.m. $= 9\frac{10}{60}$. For parts a) to e), write your answers as fractions.

a) Write each time as a fraction out of 60. Then, write your answers in lowest terms.

i) 8:10 p.m.

ii) 9:20 a.m.

iii) 7:48 a.m.

iv) 12:12 p.m.

b) The time now is 2:15 p.m. What was the time 1 h and 12 min ago?

c) The time now is 4:30 p.m. What will be the time 2 h and 36 min from now?

d) Amanda studied for $\frac{1}{3}$ of an hour. She started studying at 9:15 a.m. At what time did she finish studying?

e) How much time passed between 1:07 p.m. and 3:42 p.m.? Between 5:45 p.m. and 9:20 p.m.?

f) Sam started reading a news website at 9:45 a.m. and finished reading it in $\frac{7}{12}$ h. Mila took $\frac{1}{4}$ h more to read the website than Sam did. She started at 10:30 a.m. At what time did she finish reading the website?

22. At the school's spring fair, the student council sells $5\frac{1}{3}$ vegetarian pizzas, $6\frac{3}{4}$ pepperoni pizzas, and $4\frac{5}{6}$ cheese pizzas.

a) How many pizzas did they sell all together?

b) The student council earns \$12 profit on each pizza sold. What is their total profit?

23. There are 12 golf balls in a package. The Takeda family has $2\frac{2}{3}$ packages. Cindy takes $\frac{1}{2}$ package, her dad takes 1 package, and her brother takes 4 golf balls.

a) What fraction of a package is left?

b) How many golf balls are left?

c) What percentage of the golf balls are gone?