Lesson 7-8

Friday, December 13, 2019 10:42 AM

Name MB 413

Solve

Lesson 7-8
Add Mixed Numbers

Solve & Share

Joaquin used two types of flour in a muffin recipe. How much flour did he use in all? *Solve any way you choose.*

I can ...
add mixed numbers.

Content Standards 5.NF.A.1, 5.NF.A.2
Mathematical Practices MP.1, MP.2, MP.3, MP.7

Use Structure
Use what you know about adding fractions. *Show your work!*

Basic Muffins

- $\frac{1}{2}$ c milk
- $\frac{1}{3}$ c melted butter
- 2 eggs
- $1\frac{1}{2}$ c whole wheat flour
- $1\frac{2}{3}$ c buckwheat flour
- 1 tsp baking powder

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

$2 + 2 \approx 4$

$1\frac{3}{6} + 1\frac{4}{6} = 2\frac{7}{6}$

2: 2 4 6
3: 3 6

$1\frac{1 \times 3}{2 \times 3} = 1\frac{3}{6}$

$1\frac{2 \times 2}{3 \times 2} = 1\frac{4}{6}$

$2 + 1\frac{1}{6} = 3\frac{1}{6}$ c

Look Back! MP.3 Construct Arguments How is adding mixed numbers with unlike denominators the same as adding fractions with unlike denominators? How is it different?

It is the same because you need common denominators and equivalent fractions. They are different because Mixed Numbers have whole numbers to add.

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How Can You Add Mixed Numbers?

A

Rhoda mixes $1\frac{1}{2}$ cups of sand with $2\frac{2}{3}$ cups of potting mixture to prepare soil for her cactus plants. After mixing them together, how many cups of soil does Rhoda have?

B Step 1

Find $2\frac{2}{3} + 1\frac{1}{2}$.

Write equivalent fractions with a common denominator.

$$2\frac{2}{3} = 2\frac{4}{6}$$
$$+\ 1\frac{1}{2} = 1\frac{3}{6}$$

C Step 2

Add the fractions.

$$2\frac{2}{3} = 2\frac{4}{6}$$
$$+\ 1\frac{1}{2} = 1\frac{3}{6}$$
$$\frac{7}{6}$$

D Step 3

Add the whole numbers.

$$2\frac{2}{3} = 2\frac{4}{6}$$
$$+\ 1\frac{1}{2} = 1\frac{3}{6}$$
$$3\frac{7}{6}$$

Rewrite $\frac{7}{6}$ as a mixed number.

$$3\frac{7}{6} = 3 + 1\frac{1}{6} = 4\frac{1}{6}$$

Rhoda has $4\frac{1}{6}$ cups of soil.

Convince Me! MP.3 Critique Reasoning Kyle used 9 as an estimate for $3\frac{1}{6} + 5\frac{7}{8}$. He got $9\frac{1}{24}$ for the exact sum. Is his calculated answer reasonable? Explain.

Yes, $9\frac{1}{24}$ is only $\frac{1}{24}$ away from 9 and $\frac{1}{24}$ is close to 0. So 0+9=9

Name ______________________

Practice Buddy · Tools · Assessment

Guided Practice*

Do You Understand?

1. MP.2 Reasoning How is adding mixed numbers like adding fractions and whole numbers?

Look bottom of 413

2. Look at the example on page 414. Why is the denominator 6 used in the equivalent fractions?

6 is a multiple of 2 and 3.

Do You Know How?

In **3–6**, estimate and then find each sum.

3. $1\frac{7}{8} = 1\frac{\square}{8}$
$+\ 1\frac{1}{4} = 1\frac{\square}{8}$

4. $2\frac{2}{5} = 2\frac{\square}{30}$
$+\ 5\frac{5}{6} = 5\frac{\square}{30}$

2+6=8; ×6 12; ×6; ×5 25; ×5; $7\frac{37}{30}$; 7+1 $\frac{7}{30}$ = $8\frac{7}{30}$

1×7; 1×30, 2×15, 3×10, 5×6

5. $4\frac{1}{9} + 1\frac{1}{3}$

6. $6\frac{5}{12} + 4\frac{5}{8}$

6+5=11

12: 12 24 36
8: 8 16 24

$6\frac{5\times2}{12\times2} = 6\frac{10}{24}$
$4\frac{5\times3}{8\times3} = 4\frac{15}{24}$

$10\frac{25}{24}$

$10+1\frac{1}{24} = 11\frac{1}{24}$

Complete 15, 20, & 24

Independent Practice*

Leveled Practice In **7–18**, estimate and then find each sum.

Remember, fractions must have a common, or like, denominator before they can be added.

7. $3\frac{1}{6} = 3\frac{\square}{6}$
$+\ 5\frac{2}{3} = 5\frac{\square}{6}$

8. $11\frac{1}{2} = 11\frac{\square}{10}$
$+\ 10\frac{3}{5} = 10\frac{\square}{10}$

9. $9\frac{3}{16} = 9\frac{3}{16}$
$+\ 7\frac{5}{8} = 7\frac{\square}{\square}$

10. $5\frac{6}{7} = 5\frac{\square}{\square}$
$+\ 8\frac{1}{14} = 8\frac{1}{14}$

11. $4\frac{1}{10}$
$+\ 6\frac{1}{2}$

12. $9\frac{7}{12}$
$+\ 4\frac{3}{4}$

13. 5
$+\ 3\frac{1}{8}$

14. $8\frac{3}{4}$
$+\ 7\frac{3}{4}$

15. $2\frac{3}{4} + 7\frac{3}{5}$

3+8=11

4: 4 8 12 16 20
5: 5 10 15 20

$2\frac{3\times5}{4\times5} = 2\frac{15}{20}$
$7\frac{3\times4}{5\times4} = 7\frac{12}{20}$

$9\frac{27}{20}$

$9+1\frac{7}{20} = 10\frac{7}{20}$

16. $3\frac{8}{9} + 8\frac{1}{2}$

17. $1\frac{7}{12} + 2\frac{3}{8}$

18. $3\frac{11}{12} + 9\frac{1}{16}$

*For another example, see Set G on page 448.

Math Practices and Problem Solving*

19. Use the map to find the answer.

20. **Higher Order Thinking** Twice a day Cameron's cat eats 4 ounces of dry cat food and 2 ounces of wet cat food. Dry food comes in 5-pound bags. Wet food comes in 6-ounce cans.

6)28 → 4 r4 → 5 cans

a What is the distance from the start to the end of the trail?

b Louise walked from the start of the trail to the bird lookout and back. Did she walk a longer or shorter distance than if she had walked from the start of the trail to the end? Explain.

c Another day, Louise walked from the start of the trail to the end. At the end, she realized she forgot her binoculars at the bird lookout. She walked from the end of the trail to the bird lookout and back. What is the total distance she walked?

Cameron's cat eats 4 ounces of dry cat food and 2 ounces of wet cat food. Dry food comes in 5-pound bags. Wet food comes in 6-ounce cans.

a How many cans of wet food should he buy to feed his cat for a week?

b How many ounces of wet cat food will be left over at the end of the week?

c How many days can he feed his cat from a 5-pound bag of dry food?

21. **MP.1 Make Sense and Persevere** Julia bought 12 bags of cucumber seeds. Each bag contains 42 seeds. If she plants one half of the seeds, how many seeds does she have left?

22. **MP.3 Critique Reasoning** John added $2\frac{7}{12}$ and $5\frac{2}{3}$ and got $7\frac{1}{4}$ as the sum. Is John's answer reasonable? Explain.

Common Core Assessment

23. A male Parson's chameleon can be up to $23\frac{1}{2}$ inches long. It can extend its tongue up to $35\frac{1}{4}$ inches to catch its food. Write an addition sentence to show the total length of a male Parson's chameleon when its tongue is fully extended.

24. Arnie skated $1\frac{3}{4}$ miles from home to the lake. He skated $1\frac{1}{3}$ miles around the lake and then skated back home. Write an addition sentence to show how many miles Arnie skated in all.