

# Reasoning and Problem Solving

## Step 2: Improper Fractions to Mixed Numbers

### National Curriculum Objectives:

Mathematics Year 5: (5F2a) [Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  \$> 1\$  as a mixed number \[for example,  \$2/5 + 4/5 = 6/5 = 1 \frac{1}{5}\$ \]](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Find and explain the mistakes. Includes halves, thirds, quarters, fifths and tenths. Includes pictorial representations.

**Expected** Find and explain the mistakes. Includes fractions up to twelfths. Includes pictorial representations.

**Greater Depth** Find and explain the mistakes. Includes fractions up to twelfths and incomplete pictorial representation.

Questions 2, 5 and 8 (Reasoning)

**Developing** Identify the correct statement and explain why. Includes halves, thirds, quarters, fifths and tenths. Includes pictorial representations.

**Expected** Identify the correct statement and explain why. Includes fractions up to twelfths. Includes pictorial representations.

**Greater Depth** Identify the correct statement and explain why. Includes fractions up to twelfths.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Use the digit cards to make an accurate number sentence that converts an improper fraction into a mixed number. Includes halves, thirds, quarters, fifths and tenths.

**Expected** Use the digit cards to make an accurate number sentence that converts an improper fraction into a mixed number. Includes fractions up to twelfths.

**Greater Depth** Use the digit cards to make an accurate number sentence the converts an improper fraction into a mixed number. Includes fractions up to twelfths and additional parameters.

More [Year 5 Fractions](#) resources.

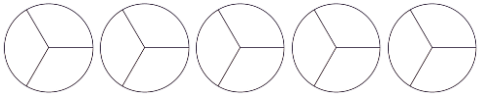
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## Improper Fractions to Mixed Numbers

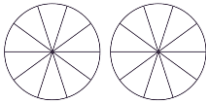
## Improper Fractions to Mixed Numbers

1a. Find and correct the mistakes. Explain your answer.

A.  $\frac{14}{3} = 4\frac{3}{2}$



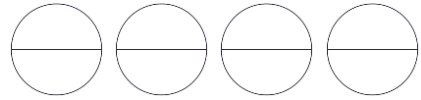
B.  $\frac{15}{10} = 2\frac{5}{10}$



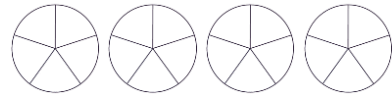
R

1b. Find and correct the mistakes. Explain your answer.

A.  $\frac{7}{2} = 2\frac{3}{2}$

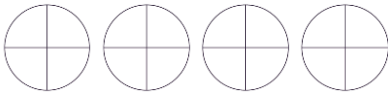


B.  $\frac{18}{5} = 3\frac{4}{5}$



R

2a. Peter has 4 pizzas for a party. They are cut into 4 equal slices. At the end of the party, there are 9 slices of pizza left.



There is  $1\frac{9}{4}$  left.

Peter

There is  $2\frac{1}{4}$  left.



Sara

Who is correct? Prove it



R

2b. Taylor has 5 cakes for a tea party. They are cut into 5 equal slices. At the end of the party, 9 slices are left.



There is  $1\frac{4}{5}$  left.

Taylor

There is  $1\frac{4}{9}$  left.



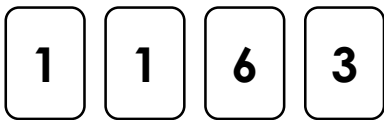
Michael

Who is correct? Prove it.



R

3a. Use the number cards to show an improper fraction as a mixed number.

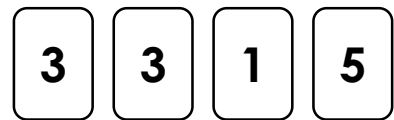


$$\frac{\boxed{\phantom{0}} \boxed{\phantom{0}}}{\boxed{2}} = \boxed{\phantom{0}} \frac{\boxed{\phantom{0}}}{\boxed{2}}$$



PS

3b. Use the number cards to show an improper fraction as a mixed number.



$$\frac{\boxed{\phantom{0}} \boxed{\phantom{0}}}{\boxed{4}} = \boxed{\phantom{0}} \frac{\boxed{\phantom{0}}}{\boxed{4}}$$



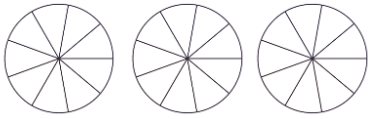
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## Improper Fractions to Mixed Numbers

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4a. Find and correct the mistakes. Explain your answer.

A.  $\frac{24}{9} = 1 \frac{6}{9}$



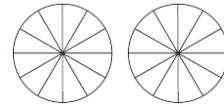
B.  $\frac{17}{6} = 2 \frac{4}{6}$



R

4b. Find and correct the mistakes. Explain your answer.

A.  $\frac{22}{12} = 2 \frac{10}{12}$

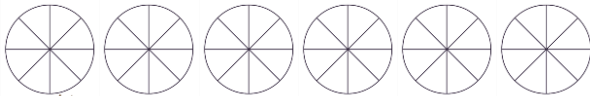


B.  $\frac{35}{8} = 4 \frac{4}{8}$



R

5a. Lewis has 6 pies for a picnic. They are cut into 8 equal slices. At the end of the party, there are 13 slices of pie left.



There is  $1 \frac{5}{8}$  left.

Lewis

There is  $1 \frac{3}{8}$  left.



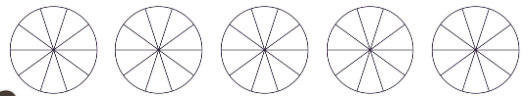
Shelley

Who is correct? Prove it



R

5b. Amy has 5 large cookies for a party. They are cut into 10 equal pieces and 42 pieces are eaten.



We ate  $4 \frac{5}{10}$  cookies.

Amy

We ate  $4 \frac{2}{10}$  cookies.



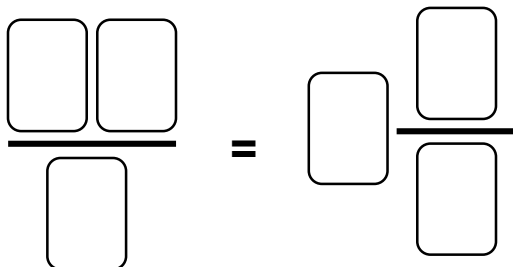
Noah

Who is correct? Prove it.



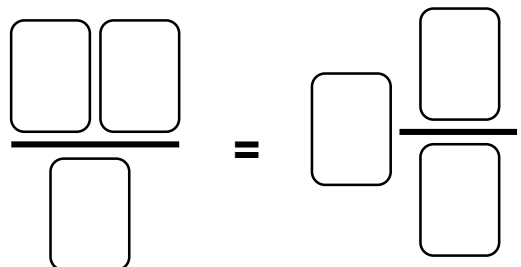
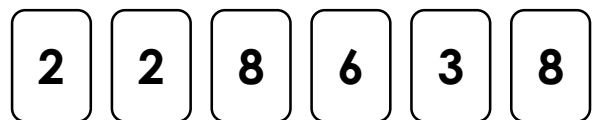
R

6a. Use the number cards to show an improper fraction as a mixed number.



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6b. Use the number cards to show an improper fraction as a mixed number.



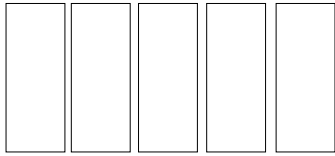
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## Improper Fractions to Mixed Numbers

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7a. Find and correct the mistakes. Explain your answer.

A.  $\frac{19}{4} = 3\frac{5}{4}$



B.  $\frac{16}{12} = 1\frac{2}{12}$



R

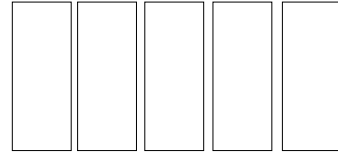


R

7b. Find and correct the mistakes. Explain your answer.

A.  $\frac{18}{11} = 1\frac{10}{11}$

B.  $\frac{22}{5} = 5\frac{2}{5}$

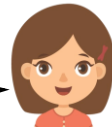


8a. Rory has 7 quiches for a party. They are cut into 6 equal slices. At the end of the party, there are 14 slices of quiche left.



Rory

We ate  $2\frac{6}{7}$  quiches.



Cecile

We ate  $4\frac{4}{6}$  quiches.

Who is correct? Prove it

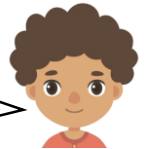


R



Patsy

We ate  $1\frac{11}{12}$  donuts.



Dean

We ate  $4\frac{1}{12}$  donuts.

Who is correct? Prove it.



R

9a. Use the number cards to show an improper fraction as a mixed number. Only one card can be used twice.



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PS



PS

9b. Use the number cards to show an improper fraction as a mixed number. Only one card can be used twice.



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## Reasoning and Problem Solving Improper Fractions to Mixed Numbers

### Developing

1a. A. The numerator and denominator are incorrect. The mixed number should

be  $4\frac{2}{3}$ .

B. The whole number is incorrect. The mixed number should be  $1\frac{5}{10}$  or  $1\frac{1}{2}$ .

2a. Sara is correct.  $\frac{9}{4} = 2\frac{1}{4}$

3a.  $\frac{13}{2} = 6\frac{1}{2}$

### Expected

4a. A. The whole number is incorrect. The mixed number should be  $2\frac{6}{9}$  or  $2\frac{2}{3}$ .

B. The numerator is incorrect. The mixed number should be  $2\frac{5}{6}$ .

5a. Lewis is correct.  $\frac{13}{8} = 1\frac{5}{8}$

6a.  $\frac{13}{5} = 2\frac{3}{5}$

### Greater Depth

7a A. The numerator is bigger than the denominator so the whole number should be 4. The mixed number should be  $4\frac{3}{4}$ .

B. The numerator is incorrect. The mixed fraction should be  $1\frac{4}{12}$  or  $1\frac{1}{3}$ .

8a. Cecile is correct.  $\frac{28}{6} = 4\frac{4}{6}$

9a.  $\frac{39}{7} = 5\frac{4}{7}$

## Reasoning and Problem Solving Improper Fractions to Mixed Numbers

### Developing

1b. A. The numerator is bigger than the denominator so the whole number should be 3. The mixed number should be  $3\frac{1}{2}$ .

B. The numerator is incorrect. The mixed number should be  $3\frac{3}{5}$ .

2b. Taylor is correct.  $\frac{9}{5} = 1\frac{4}{5}$

3b.  $\frac{15}{4} = 3\frac{3}{4}$

### Expected

4b. A. The whole number is incorrect. The mixed number should be  $1\frac{10}{12}$  or  $1\frac{5}{6}$ .

B. The numerator is incorrect. The mixed number should be  $4\frac{3}{8}$ .

5b. Noah is correct.  $\frac{42}{10} = 4\frac{2}{10}$

6b.  $\frac{26}{8} = 3\frac{2}{8}$

### Greater Depth

7b. A. The numerator is incorrect. The mixed number should be  $1\frac{7}{11}$ .

B. The whole number is incorrect. The mixed number should be  $4\frac{2}{5}$ .

8b. Patsy is correct.  $\frac{23}{12} = 1\frac{11}{12}$

9b.  $\frac{59}{8} = 7\frac{3}{8}$