Name _____

Mixed Numbers and Unit Fractions

Write each mixed number as the product of a whole number and a unit fraction.

1. $1\frac{1}{3}$ $4 \times \frac{1}{3}$

2. $3\frac{1}{2}$ $7 \times \frac{1}{2}$

3. $1\frac{3}{5}$ $8 \times \frac{1}{5}$

4. $2\frac{3}{8}$ $19 \times \frac{1}{8}$

5. $3\frac{3}{4}$ $15 \times \frac{1}{4}$

6. $5\frac{2}{3}$ $17 \times \frac{1}{3}$

7. $4\frac{2}{5}$ $22 \times \frac{1}{5}$

8. $5\frac{1}{5}$ $26 \times \frac{1}{5}$

9. Write Math **Explain** how you found the answer in Exercise 1.

Possible explanation: First I rewrote the mixed number $1\frac{1}{3}$ as a fraction greater than 1, $\frac{4}{3}$. Then I used repeated addition to write $\frac{4}{3}$ as $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$, or $4 \times \frac{1}{3}$.

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Multiples of Mixed Numbers

List the next three multiples of the mixed number. Write each multiple as a mixed number or as a whole number.

1. $1\frac{1}{8}$ $2\frac{2}{8}, 3\frac{3}{8}, 4\frac{4}{8}$

2. $2\frac{1}{2}$ $5, 7\frac{1}{2}, 10$

3. $1\frac{2}{3}$ $3\frac{1}{3}, 5, 6\frac{2}{3}$

4. $2\frac{1}{3}$ $4\frac{2}{3}, 7, 9\frac{1}{3}$

5. $3\frac{1}{5}$ $6\frac{2}{5}, 9\frac{3}{5}, 12\frac{4}{5}$

6. $1\frac{1}{4}$ $2\frac{2}{4}, 3\frac{3}{4}, 5$

7. $1\frac{3}{5}$ $3\frac{1}{5}, 4\frac{4}{5}, 6\frac{2}{5}$

8. $2\frac{3}{4}$ $5\frac{2}{4}, 8\frac{1}{4}, 11$

9. Write Math Describe a method other than multiplication that you can use to find the next three multiples of the mixed number in Exercise 7.

Possible answer: I can use repeated addition. To get the first multiple, start with $1\frac{3}{5}$ and add $1\frac{3}{5}$. To get the second multiple, add $1\frac{3}{5}$ to the first multiple. To get the third multiple, add $1\frac{3}{5}$ to the second multiple.

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Fraction of a Whole Number

Find the product. Write the product as a whole number.

1. $\frac{1}{8} \times 24 =$ **3**

2. $\frac{2}{3} \times 15 =$ **10**

3. $\frac{3}{5} \times 10 =$ **6**

4. $\frac{4}{7} \times 14 =$ **8**

5. $\frac{5}{6} \times 18 =$ **15**

6. $\frac{3}{4} \times 16 =$ **12**

7. $\frac{2}{9} \times 27 =$ **6**

8. $\frac{7}{8} \times 32 =$ **28**

9. $\frac{9}{10} \times 50 =$ **45**

10. $\frac{4}{5} \times 45 =$ **36**

11. $\frac{5}{12} \times 60 =$ **25**

12. $\frac{8}{9} \times 54 =$ **48**

13. Write Math Explain how you can tell if the product of a fraction and a whole number will be a whole number.

Possible explanation: when the denominator of the fraction is a factor of the whole number, the product will be a whole number.

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Unknown Numbers

Find the unknown number that makes each equation true.

1. $\square \times \frac{3}{4} = 2\frac{1}{4}$

3

2. $4 \times \frac{\square}{5} = 1\frac{3}{5}$

2

3. $7 \times \square = 1\frac{5}{9}$

$\frac{2}{9}$

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

3

5. $\square \times 1\frac{5}{6} = 9\frac{1}{6}$

5

6. $\square \times 2\frac{2}{7} = 13\frac{5}{7}$

6

7. Write Math **Explain** how you found the unknown number in Exercise 3.

Possible answer: first, I wrote 7 as $\frac{7}{1}$ and $1\frac{5}{9}$ as the fraction $\frac{14}{9}$. I rewrote the multiplication sentence as $\frac{7}{1} \times \square = \frac{14}{9}$. The unknown number must be a fraction, since the product is a fraction. To find the numerator of the unknown fraction, I divided 14 by 7 to get 2. To find the denominator of the unknown fraction, I divided 9 by 1 to get 9. So the unknown number is $\frac{2}{9}$.

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Heights and Depths

Solve each problem. You may find it helpful to draw a diagram.

1. The depth of Lake Carl is about $1\frac{1}{8}$ miles. Lake Susan is 3 times as deep as Lake Carl. Lake Wayne is 2 times as deep as Lake Susan. How much deeper is Lake Wayne than Lake Susan?

   $3\frac{3}{8}$ miles

2. Mount Rogers rises $\frac{1}{4}$ mile above sea level. Mount Taylor rises 6 times as high as Mount Rogers. Mount Sullivan rises 2 times as high as Mount Rogers. What is the difference in the elevation of Mount Taylor and the elevation of Mount Sullivan?

   $\frac{4}{4}$ or 1 mile

3. A certain tree was $5\frac{1}{3}$ feet tall when it was first planted. A few years later, the tree is 4 times as tall as it was when it was first planted. How much has the tree grown since it was first planted?

   16 feet

4. Write Math **Explain** how you solved Problem 3.

   Possible explanation: I drew a comparison model to compare the different heights of the tree. I used the model to write the equation $t = 4 \times 5\frac{1}{3}$. I solved the equation and got $t = 21\frac{1}{3}$. This represents the tree's new height. To find how much the tree had grown, I subtracted $21\frac{1}{3} - 5\frac{1}{3}$, which is 16 feet.