3-1 Homework

Name _____ Date _____

Solve. Write a multiplication equation for each problem.

Miguel swam 6 lengths of the pool. Po Lan swam 3 times as far as Miguel. Lionel swam $\frac{1}{3}$ as far as Miguel.

1. How many lengths did Po Lan swim? 18

   Write the equation. $3 \cdot 6 = 18$

2. How many lengths did Lionel swim? 2

   Write the equation. $\frac{1}{3} \cdot 6 = 2$

Chris cut a length of rope that was 12 feet long. Dayna cut a rope 4 times as long as Chris's rope. Benita cut a rope $\frac{1}{4}$ as long as Chris's rope.

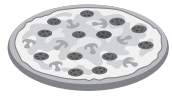
3. How long is Dayna's rope? 48 ft

   Write the equation. $4 \cdot 12 = 48$

4. How long is Benita's rope? 3 ft

   Write the equation. $\frac{1}{4} \cdot 12 = 3$

Write two statements for each pair of treats. Use the word *times*.

Treat	Number
	24
	8
	2

5. Compare cookies and drinks.

   There are 3 times as many cookies as drinks.

   There are $\frac{1}{3}$ times as many drinks as cookies.

6. Compare drinks and pizzas.

   There are 4 times as many drinks as pizzas.

   There are $\frac{1}{4}$ times as many pizzas as drinks.

7. Compare cookies and pizzas.

   There are 12 times as many cookies as pizzas.

   There are $\frac{1}{12}$ times as many pizzas as cookies.

Solve.

8. $\frac{1}{3} \cdot 18 =$ 6

9. $\frac{1}{4}$ of 12 = 3

10. $\frac{1}{8} \cdot 32 =$ 4

11. $\frac{1}{9}$ of 27 = 3

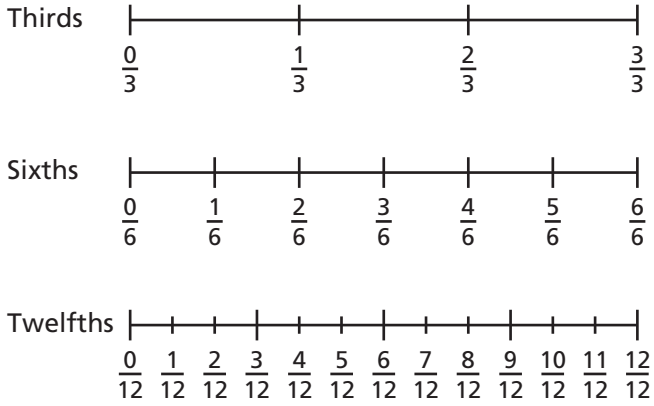
12. $\frac{1}{8} \cdot 56 =$ 7

13. $\frac{1}{3}$ of 15 = 5

3-1 Remembering

Name _____ Date _____

Use the number lines to complete Exercises 1–3.



1. If you run $\frac{2}{3}$ mile, how many sixths have you run?

   $\frac{4}{6}$

2. If you measure $\frac{5}{6}$ meter, how many twelfths have you measured?

   $\frac{10}{12}$

3. If you have $\frac{8}{12}$ of a pizza, how many thirds do you have?

   $\frac{2}{3}$

Write each fraction as a decimal.

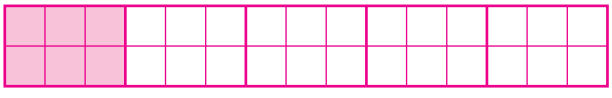
4. $\frac{76}{1{,}000} =$ 0.076
5. $\frac{7}{10} =$ 0.7
6. $\frac{49}{100} =$ 0.49
7. $\frac{32}{1{,}000} =$ 0.032

Add or subtract.

8. $0.28 + 0.43 =$ 0.71
9. $0.7 + 0.04 =$ 0.74
10. $7.8 - 1.95 =$ 5.85

11. **Stretch Your Thinking** Draw a diagram that shows $\frac{1}{5}$ times 30 equals 6.

Possible answer:



3-2 Homework

Name _____ Date _____

Multiply.

1. $\frac{2}{3} \cdot 15 =$ 10
2. $\frac{3}{4} \cdot 8 =$ 6
3. $\frac{7}{8} \cdot 32 =$ 28
4. $\frac{2}{9} \cdot 27 =$ 6
5. $\frac{3}{8} \cdot 56 =$ 21
6. $\frac{3}{4} \cdot 16 =$ 12
7. $\frac{2}{3} \cdot 21 =$ 14
8. $\frac{4}{5} \cdot 35 =$ 28
9. $\frac{5}{7} \cdot 28 =$ 20
10. $\frac{4}{9} \cdot 45 =$ 20
11. $\frac{5}{12} \cdot 24 =$ 10
12. $\frac{9}{10} \cdot 70 =$ 63
13. $\frac{7}{9} \cdot 18 =$ 14
14. $\frac{5}{8} \cdot 80 =$ 50
15. $\frac{4}{15} \cdot 45 =$ 12

Solve. *Show your work.*

16. Rebecca has 21 math problems to solve. She has solved $\frac{2}{7}$ of them. How many problems has she solved?

    6 problems

17. Tessa shot 36 free throws. She made 27 of them. What fraction of her free throws did Tessa make?

    $\frac{3}{4}$

18. A carousel has 56 horses. $\frac{3}{8}$ of them are white. How many horses are not white?

    35 horses

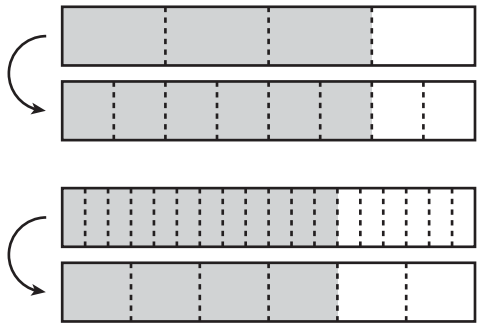
19. Nathan works at a hardware store. Today he sold 48 tools. $\frac{5}{6}$ of the tools he sold were hammers. How many hammers did Nathan sell today?

    40 hammers

3-2 Remembering

Name _____ Date _____

Complete each exercise about the pairs of fraction bars.



1. What equivalent fractions are shown? $\frac{3}{4}, \frac{6}{8}$
2. Identify the multiplier. 2
3. What equivalent fractions are shown? $\frac{12}{18}, \frac{4}{6}$
4. Identify the divisor. 3

Write each amount as a decimal number.

5. $\frac{84}{1{,}000}$ 0.084
6. $\frac{31564}{1{,}000}$ 31.564
7. $\frac{1176}{100}$ 11.76
8. $\frac{876}{1{,}000}$ 0.876

Solve. Write a multiplication equation for each problem.

Jonas has 8 sponsors for the school walk-a-thon.
Maura has 3 times as many sponsors as Jonas.
Trenton has $\frac{1}{4}$ as many sponsors as Jonas.

9. How many sponsors does Maura have? 24

   Write the equation. $8 \cdot 3 = 24$

10. How many sponsors does Trenton have? 2

    Write the equation. $\frac{1}{4} \cdot 8 = 2$

11. **Stretch Your Thinking** Hannah and Jo are driving separately to a restaurant that is 60 miles away from their town. Hannah drives $\frac{3}{5}$ of the distance and Jo drives $\frac{5}{6}$ of the distance before stopping for gasoline. Who has driven farther? How many more miles does each driver need to drive to reach the restaurant?

    Jo has driven $\frac{5}{6} \cdot 60 = 5 \cdot (\frac{1}{6}$ of $60) = 5 \cdot 10 = 50$ miles.

    Hannah has driven $\frac{3}{5} \cdot 60 = 3 \cdot (\frac{1}{5} \cdot 60) = 3 \cdot 12 = 36$ miles.

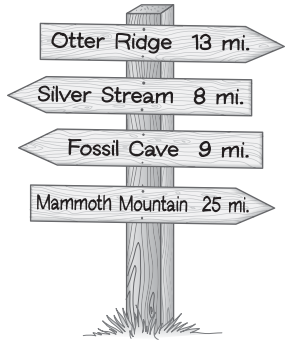
    Jo has driven farther. Jo has 10 miles to go.

    Hannah as 24 miles to go.

3-3 Homework

Name _____ Date _____

The campers in each cabin at Bear Claw Camp held a contest to see who could walk the farthest in one day. Use the sign to answer the questions. Write your answers as fractions.



1. The campers in Cabin A walked $\frac{1}{4}$ of the way to Otter Ridge. How many miles did they walk?

   $\frac{13}{4}$ miles

2. The campers in Cabin B walked $\frac{2}{3}$ of the way to Silver Stream. How many miles did they walk?

   $\frac{16}{3}$ miles

3. The campers in Cabin C walked $\frac{3}{5}$ of the way to Fossil Cave. How many miles did they walk?

   $\frac{27}{5}$ miles

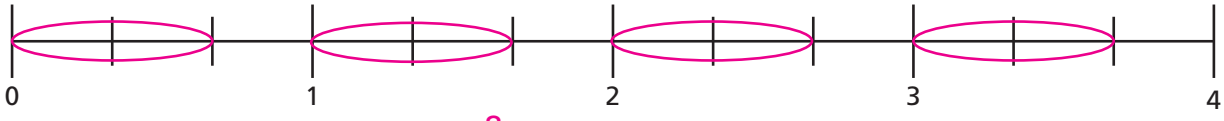
4. The campers in Cabin D walked $\frac{1}{6}$ of the way to Mammoth Mountain. How many miles did they walk?

   $\frac{25}{6}$ miles

5. Which group of campers walked the farthest that day?

   Cabin C

6. Show $\frac{2}{3}$ of 4 on the number line.



7. Write $\frac{2}{3}$ of 4 as a fraction. $\frac{8}{3}$

8. Write $\frac{2}{3}$ of 4 as a mixed number. $2\frac{2}{3}$

Multiply. Write your answers as fractions.

9. $\frac{2}{7} \cdot 4 = \frac{8}{7}$

10. $\frac{2}{3} \cdot 8 = \frac{16}{3}$

11. $\frac{5}{6} \cdot 4 = \frac{20}{6}$

12. $\frac{2}{9} \cdot 20 = \frac{40}{9}$

13. $\frac{7}{9} \cdot 2 = \frac{14}{9}$

14. $\frac{3}{8} \cdot 5 = \frac{15}{8}$

15. $\frac{2}{3} \cdot 13 = \frac{26}{3}$

16. $\frac{5}{12} \cdot 18 = \frac{90}{12}$

17. $\frac{5}{9} \cdot 12 = \frac{60}{9}$

3-3 Remembering

Name _____ Date _____

Compare.

1. $\frac{5}{6} > \frac{5}{7}$
2. $\frac{1}{5} < \frac{1}{4}$
3. $\frac{8}{10} > \frac{6}{8}$
4. $\frac{6}{7} < \frac{7}{8}$
5. $\frac{2}{3} < \frac{3}{4}$
6. $\frac{8}{9} > \frac{6}{7}$

Compare.

7. 0.54 < 0.65
8. 0.207 < 0.342
9. 0.5 > 0.47
10. 0.76 > 0.67
11. 0.22 < 0.41
12. 0.6 > 0.06

Multiply.

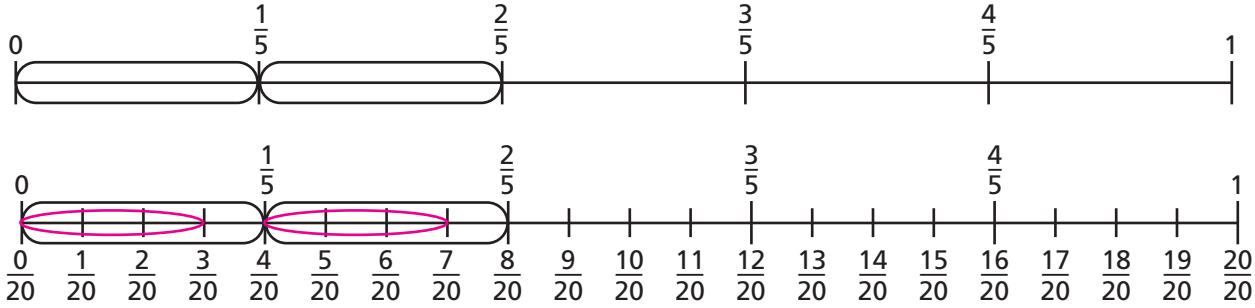
13. $\frac{4}{5} \cdot 20 =$ 16
14. $\frac{2}{3} \cdot 21 =$ 14
15. $\frac{5}{8} \cdot 24 =$ 15
16. $\frac{1}{9} \cdot 36 =$ 4
17. $\frac{3}{4} \cdot 16 =$ 12
18. $\frac{2}{7} \cdot 14 =$ 4
19. $\frac{3}{12} \cdot 24 =$ 6
20. $\frac{8}{10} \cdot 80 =$ 64
21. $\frac{3}{9} \cdot 45 =$ 15

22. **Stretch Your Thinking** Write a multiplication equation using one whole number and one fraction that have a product of $\frac{18}{8}$.
Possible answer: $6 \cdot \frac{3}{8} = \frac{18}{8}$

3-4 Homework

Name _____ Date _____

Tanith is using a number line to find $\frac{3}{4} \cdot \frac{2}{5}$. This is her work so far:

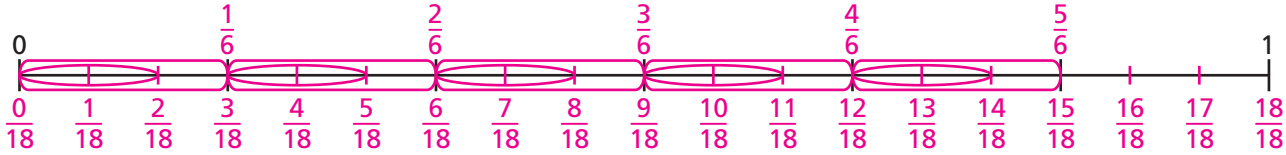


1. Explain Tanith's work so far to someone at home.

2. Finish Tanith's work by circling $\frac{3}{4}$ of each circled fifth. How many 20ths did you circle altogether? 6

   What is $\frac{3}{4} \cdot \frac{2}{5}$? $\frac{6}{20}$ or $\frac{3}{10}$

3. Use the number line to find $\frac{2}{3} \cdot \frac{5}{6}$. Label all the parts above and below. $\frac{10}{18}$



Solve. *Show your work.*

4. Four friends at a party popped $\frac{3}{4}$ of a bag of popcorn. They ate half of what was popped. What fraction of the popcorn in the bag did they eat? $\frac{3}{8}$

5. Ashley brought $\frac{7}{8}$ gallon of lemonade to the party. Her friends drank $\frac{2}{3}$ of it. How many gallons of lemonade did they drink? $\frac{7}{12}$ gallon

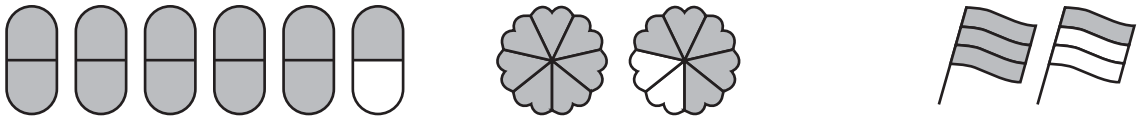
Multiply. You do not need to simplify.

6. $\frac{2}{7} \cdot \frac{1}{3} = \frac{2}{21}$
7. $\frac{4}{9} \cdot \frac{2}{9} = \frac{8}{81}$
8. $\frac{1}{8} \cdot \frac{5}{6} = \frac{5}{48}$
9. $\frac{2}{7} \cdot 12 = \frac{24}{7}$
10. $\frac{4}{5} \cdot \frac{2}{3} = \frac{8}{15}$
11. $\frac{1}{7} \cdot \frac{3}{5} = \frac{3}{35}$
12. $\frac{9}{10} \cdot \frac{1}{2} = \frac{9}{20}$
13. $\frac{5}{12} \cdot 3 = \frac{15}{12}$
14. $\frac{5}{6} \cdot \frac{1}{6} = \frac{5}{36}$

3-4 Remembering

Name _____ Date _____

Name the mixed number shown by the shaded parts.



1. $5\frac{1}{2}$

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

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

Add.

4. $454 + 0.65 = \underline{454.65}$

5. $80.55 + 0.91 = \underline{81.46}$

6. $31.78 \text{ m} + 6.2 \text{ m} = \underline{37.98 \text{ m}}$

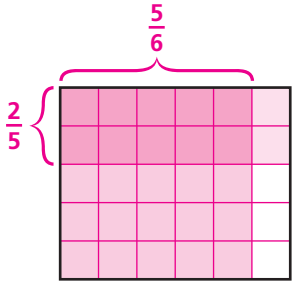
7. Show $\frac{1}{3}$ of 7 on the number line.

8. Write $\frac{1}{3}$ of 7 as a fraction. $\frac{7}{3}$

9. Write $\frac{1}{3}$ of 7 as a mixed number. $2\frac{1}{3}$

10. **Stretch Your Thinking** Solve for the unknown fraction. Then divide and shade an area model to show the equation. $\frac{2}{5} \cdot ? = \frac{10}{30}$.

$\frac{5}{6}$



3-5 Homework

Name _____ Date _____

Multiply. Simplify first if you can.

1. $\frac{2}{5} \cdot \frac{6}{7} = \frac{12}{35}$
2. $\frac{\overset{1}{\cancel{4}}}{9} \cdot \frac{1}{\underset{2}{\cancel{8}}} = \frac{1}{18}$
3. $\frac{\overset{1}{\cancel{5}}}{\underset{3}{\cancel{24}}} \cdot \frac{\overset{1}{\cancel{8}}}{\underset{3}{\cancel{15}}} = \frac{1}{9}$
4. $\frac{2}{17} \cdot \frac{8}{1} = \frac{16}{17}$
5. $\frac{3}{\underset{1}{\cancel{4}}} \cdot \frac{\overset{3}{\cancel{12}}}{25} = \frac{9}{25}$
6. $\frac{5}{7} \cdot \frac{3}{8} = \frac{15}{56}$
7. $\frac{\overset{1}{\cancel{3}}}{\underset{5}{\cancel{10}}} \cdot \frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{3}}} = \frac{1}{5}$
8. $\frac{\overset{1}{\cancel{5}}}{\underset{8}{\cancel{16}}} \cdot \frac{\overset{1}{\cancel{2}}}{\underset{5}{\cancel{25}}} = \frac{1}{40}$
9. $\frac{\overset{1}{\cancel{4}}}{\underset{5}{\cancel{35}}} \cdot \frac{\overset{1}{\cancel{7}}}{\underset{3}{\cancel{12}}} = \frac{1}{15}$
10. $\frac{5}{6} \cdot \frac{7}{1} = \frac{35}{6}$
11. $\frac{\overset{1}{\cancel{7}}}{\underset{3}{\cancel{9}}} \cdot \frac{\overset{2}{\cancel{6}}}{\underset{7}{\cancel{49}}} = \frac{2}{21}$
12. $\frac{7}{\underset{4}{\cancel{8}}} \cdot \frac{\overset{1}{\cancel{2}}}{3} = \frac{7}{12}$

13. Which fraction is not equivalent to the others?

$\frac{3}{15}$ $\frac{2}{10}$ $\frac{1}{5}$ $\frac{9}{45}$ $\frac{10}{50}$ $\frac{6}{40}$ $\frac{7}{35}$ $\frac{100}{500}$

Solve. *Show your work.*

14. In the town zoo, $\frac{3}{28}$ of the animals are birds. Of the birds, $\frac{4}{15}$ are birds of prey. What fraction of the animals at the zoo are birds of prey?

$\frac{1}{35}$

15. Tuesday at the zoo, $\frac{5}{12}$ of the visitors were adults. Of these adults, $\frac{3}{10}$ were men. What fraction of the people who visited the zoo on Tuesday were men?

$\frac{1}{8}$

16. On Tuesday, $\frac{14}{25}$ of the souvenirs purchased at the zoo gift shop were stuffed animals. Of the stuffed animals purchased, $\frac{10}{21}$ were bears. What fraction of the souvenirs purchased at the zoo gift shop on Tuesday were stuffed bears?

$\frac{4}{15}$

3-5 Remembering

Name _____ Date _____

Add or subtract.

1. $1\frac{4}{5} + 5\frac{2}{5}$
   $7\frac{1}{5}$

2. $5\frac{1}{6} + 3\frac{5}{6}$
   9

3. $1\frac{2}{3} - \frac{1}{3}$
   $1\frac{1}{3}$

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

5. $7\frac{8}{9} - 3\frac{5}{9}$
   $4\frac{3}{9}$ or $4\frac{1}{3}$

6. $6 - 4\frac{1}{2}$
   $1\frac{1}{2}$

Subtract.

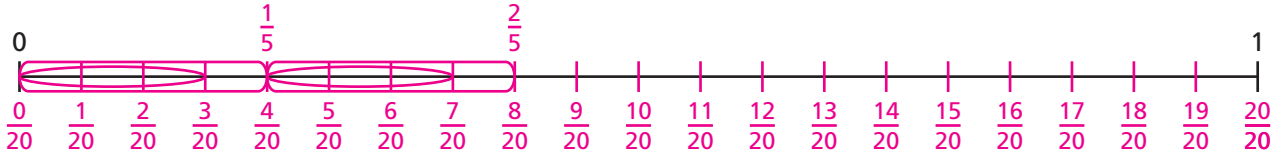
7. $31{,}763 - 6.51 =$
   31,756.49

8. $132.76 - 87.24 =$
   45.52

9. $968.29 - 217.5 =$
   750.79

10. Use the number line to find $\frac{3}{4} \cdot \frac{2}{5}$. Label all the parts above and below.

$\frac{3}{4} \cdot \frac{2}{5} =$ $\frac{6}{20}$



11. **Stretch Your Thinking** Write a word problem that will use the equation $\frac{2}{6} \cdot \frac{8}{10} = x$ in order to solve. Then simplify and multiply to solve.

Possible answer: Jacob scored $\frac{8}{10}$ of the basketball team's points in Saturday's basketball game. Two sixths of the points Jacob scored were from free throws. What fraction of the team's points did Jacob score from free throws? $\frac{2}{6} \cdot \frac{8}{10} = \frac{1}{3} \cdot \frac{4}{5} = \frac{4}{15}$

3-6 Homework

Name _____ Date _____

Find each product by first rewriting each mixed number as a fraction.

1. $\frac{3}{7} \cdot 2\frac{1}{2} =$ $\frac{3}{7} \cdot \frac{5}{2} = \frac{15}{14} = 1\frac{1}{14}$

2. $1\frac{7}{10} \cdot 5 =$ $\frac{17}{10} \cdot \frac{5}{1} = \frac{17}{2} = 8\frac{1}{2}$

3. $2\frac{2}{3} \cdot 4\frac{1}{5} =$ $\frac{8}{3} \cdot \frac{21}{5} = \frac{56}{5} = 11\frac{1}{5}$

4. $5\frac{1}{3} \cdot \frac{3}{8} =$ $\frac{16}{3} \cdot \frac{3}{8} = 2$

5. $\frac{5}{9} \cdot 1\frac{2}{5} =$ $\frac{5}{9} \cdot \frac{7}{5} = \frac{7}{9}$

6. $12 \cdot 2\frac{3}{4} =$ $\frac{12}{1} \cdot \frac{11}{4} = 33$

7. $3\frac{1}{2} \cdot 3\frac{1}{2} =$ $\frac{7}{2} \cdot \frac{7}{2} = \frac{49}{4} = 12\frac{1}{4}$

8. $\frac{1}{9} \cdot 3\frac{9}{10} =$ $\frac{1}{9} \cdot \frac{39}{10} = \frac{13}{30}$

Solve. *Show your work.*

9. The bottom of Zeyda's jewelry box is a rectangle with length $5\frac{3}{8}$ inches and width $3\frac{1}{4}$ inches. What is the area of the bottom of the jewelry box?

   $17\frac{15}{32}$ square inches

10. The Patel family went apple picking. The number of red apples they picked was $2\frac{2}{9}$ times the number of green apples they picked. If they picked 45 green apples, how many red apples did they pick?

    100 red apples

11. The art museum is $8\frac{1}{2}$ miles from Alison's house. Alison has ridden her bike $\frac{2}{3}$ of the way there so far. How far has she gone?

    $5\frac{2}{3}$ miles

3-6 Remembering

Name _____ Date _____

Add.

1. $\frac{3}{8} + \frac{1}{6}$ — $\frac{13}{24}$
2. $\frac{1}{5} + \frac{3}{4}$ — $\frac{19}{20}$
3. $\frac{5}{6} + \frac{1}{8}$ — $\frac{23}{24}$
4. $\frac{1}{3} + \frac{2}{7}$ — $\frac{13}{21}$
5. $\frac{2}{3} + \frac{1}{9}$ — $\frac{7}{9}$
6. $\frac{4}{5} + \frac{1}{10}$ — $\frac{9}{10}$

Use the Commutative Property to solve for *n*.

7. $55{,}207 + 87{,}331 = 87{,}331 + n$

   $n =$ 55,207

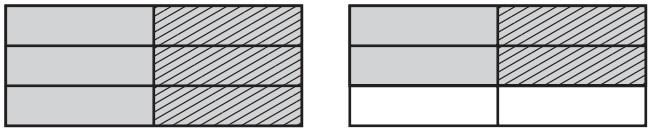
8. $48.76 + 20.08 = 20.08 + n$

   $n =$ 48.76

Multiply. Simplify first if you can.

9. $\frac{2}{3} \cdot \frac{3}{4} =$ $\frac{1}{2}$
10. $\frac{7}{10} \cdot \frac{6}{7} =$ $\frac{3}{5}$
11. $\frac{3}{5} \cdot \frac{5}{6} =$ $\frac{1}{2}$
12. $\frac{5}{6} \cdot \frac{12}{25} =$ $\frac{2}{5}$
13. $\frac{1}{2} \cdot \frac{4}{7} =$ $\frac{2}{7}$
14. $\frac{2}{9} \cdot \frac{3}{8} =$ $\frac{1}{12}$

15. **Stretch Your Thinking** Complete the mixed number equation that is represented by the area model.



$\frac{1}{2} \cdot$ $1\frac{2}{3}$ $=$ $\frac{5}{6}$

3-7 Homework

Name _____ Date _____

Solve.

1. $\frac{3}{4} \cdot \frac{1}{8}$ $\frac{3}{32}$
2. $\frac{2}{3} - \frac{1}{9}$ $\frac{5}{9}$
3. $\frac{1}{10} + \frac{1}{5}$ $\frac{3}{10}$
4. $\frac{2}{7} \cdot 12$ $\frac{24}{7} = 3\frac{3}{7}$
5. $\frac{1}{5} + \frac{2}{3}$ $\frac{13}{15}$
6. $\frac{1}{4} + \frac{3}{8}$ $\frac{5}{8}$
7. $\frac{5}{7} \cdot \frac{5}{6}$ $\frac{25}{42}$
8. $\frac{11}{12} + 3$ $3\frac{11}{12}$
9. $\frac{4}{9} - \frac{2}{9}$ $\frac{2}{9}$
10. $\frac{1}{3} \cdot \frac{1}{8}$ $\frac{1}{24}$
11. $\frac{7}{8} \cdot \frac{3}{4}$ $\frac{21}{32}$
12. $10 - \frac{1}{9}$ $\frac{89}{9} = 9\frac{8}{9}$

Solve. *Show your work.*

13. Rodrigo's fish bowl holds $\frac{7}{8}$ gallon of water. It is now $\frac{1}{2}$ full. How much water is in it?
$\frac{7}{16}$ gallon

14. Kenya jumped $7\frac{1}{6}$ feet. Janet jumped $6\frac{1}{3}$ feet. How much farther did Kenya jump?
$\frac{5}{6}$ foot

15. A group of hikers walked $8\frac{7}{10}$ miles to Caribou Cave and then $5\frac{1}{5}$ miles to Silver Stream. How far did they walk altogether?
$13\frac{9}{10}$ miles

16. A recipe calls for $\frac{3}{4}$ cup of flour. Estevan wants to make $\frac{1}{3}$ of the recipe. How much flour will he need?
$\frac{1}{4}$ cup

17. A truck was carrying $2\frac{1}{8}$ tons of sand. When it arrived, only $1\frac{1}{2}$ tons of sand were left. How much sand was lost along the way?
$\frac{5}{8}$ ton

3-7 Remembering

Name _____ Date _____

Subtract.

1. $\frac{3}{4} - \frac{1}{6}$ $\frac{7}{12}$
2. $\frac{2}{9} - \frac{1}{10}$ $\frac{11}{90}$
3. $\frac{7}{8} - \frac{1}{4}$ $\frac{5}{8}$
4. $\frac{6}{7} - \frac{1}{3}$ $\frac{11}{21}$
5. $\frac{4}{5} - \frac{2}{3}$ $\frac{2}{15}$
6. $\frac{1}{2} - \frac{1}{8}$ $\frac{3}{8}$

Estimate each sum or difference. Sample estimates shown; accept reasonable estimates.

7. $6.759 + 2.099$ 9
8. $\$44.25 - \$21.76$ $22
9. $14.6 + 2.4$ 17

Find each product by first rewriting each mixed number as a fraction.

10. $\frac{5}{8} \cdot 3\frac{1}{3} =$ $\frac{5}{8} \cdot \frac{10}{3} = \frac{25}{12} = 2\frac{1}{12}$
11. $4\frac{3}{5} \cdot 5 =$ $\frac{23}{5} \cdot \frac{5}{1} = \frac{23}{1} = 23$
12. $1\frac{2}{5} \cdot 3\frac{4}{9} =$ $\frac{7}{5} \cdot \frac{31}{9} = \frac{217}{45} = 4\frac{37}{45}$
13. $6\frac{1}{5} \cdot \frac{5}{8} =$ $\frac{31}{5} \cdot \frac{5}{8} = \frac{31}{8} = 3\frac{7}{8}$
14. **Stretch Your Thinking** Give an example that shows how to use the Distributive Property to multiply a number by a sum. All of the numbers you use should be mixed numbers or fractions.

Possible answer: $\frac{2}{3} \cdot (2\frac{1}{4} + \frac{5}{6}) = \frac{2}{3} \cdot 2\frac{1}{4} + \frac{2}{3} \cdot \frac{5}{6} = \frac{2}{3} \cdot \frac{9}{4} + \frac{2}{3} \cdot \frac{5}{6} = \frac{3}{2} + \frac{5}{9} = \frac{37}{18} = 2\frac{1}{18}$

3-8 Homework

Name _____ Date _____

Complete each fraction box.

1

$\frac{7}{8}$ and $\frac{3}{4}$	
$>$	$\frac{7}{8} > \frac{3}{4}$ or $\frac{7}{8} > \frac{6}{8}$
$+$	$\frac{7}{8} + \frac{3}{4} = \frac{7}{8} + \frac{6}{8} = \frac{13}{8} = 1\frac{5}{8}$
$-$	$\frac{7}{8} - \frac{3}{4} = \frac{7}{8} - \frac{6}{8} = \frac{1}{8}$
$\cdot$	$\frac{7}{8} \cdot \frac{3}{4} = \frac{21}{32}$

2

$\frac{1}{2}$ and $\frac{3}{5}$	
$>$	$\frac{3}{5} > \frac{1}{2}$ or $\frac{6}{10} > \frac{5}{10}$
$+$	$\frac{1}{2} + \frac{3}{5} = \frac{5}{10} + \frac{6}{10} = \frac{11}{10} = 1\frac{1}{10}$
$-$	$\frac{3}{5} - \frac{1}{2} = \frac{6}{10} - \frac{5}{10} = \frac{1}{10}$
$\cdot$	$\frac{1}{2} \cdot \frac{3}{5} = \frac{3}{10}$

Solve. *Show your work.*

3 The Eagle Trucking Company must deliver $\frac{7}{8}$ ton of cement blocks and $\frac{5}{8}$ ton of bricks to one place. How much will this load weigh?

$1\frac{1}{2}$ tons

4 A truck carried $3\frac{1}{3}$ tons of sand, but lost $\frac{1}{4}$ ton along the way. How many tons of sand were delivered?

$3\frac{1}{12}$ tons

5 The trucking company also needs to deliver $1\frac{2}{3}$ tons of oak logs and $1\frac{7}{12}$ tons of maple logs. Which load weighs more?

oak logs

6 In a load of $\frac{3}{4}$ ton of steel rods, $\frac{1}{8}$ of them are bent. How many tons of steel rods are bent?

$\frac{3}{32}$ ton

7 The company delivered $1\frac{3}{5}$ tons of bricks to one building site. They delivered $2\frac{1}{2}$ times this much to a second site. What was the weight of the load the company delivered to the second site?

4 tons

3-8 Remembering

Name _____ Date _____

Multiply.

1. $2{,}548 \times 5 = 12{,}740$
2. $21 \times 45 = 945$
3. $3{,}015 \times 6 = 18{,}090$
4. $33 \times 4 = 132$
5. $65 \times 87 = 5{,}655$
6. $215 \times 9 = 1{,}935$

Find each product by first rewriting each mixed number as a fraction.

7. $4\frac{4}{9} \cdot 2\frac{2}{3} = \frac{40}{9} \cdot \frac{8}{3} = \frac{320}{27} = 11\frac{23}{27}$
8. $6\frac{1}{5} \cdot 10 = \frac{31}{5} \cdot \frac{10}{1} = \frac{62}{1} = 62$
9. $3\frac{5}{6} \cdot \frac{12}{13} = \frac{23}{6} \cdot \frac{12}{13} = \frac{46}{13} = 3\frac{7}{13}$
10. $5\frac{1}{3} \cdot \frac{3}{5} = \frac{16}{3} \cdot \frac{3}{5} = \frac{16}{5} = 3\frac{1}{5}$

Solve.

11. $\frac{6}{7} - \frac{2}{7} = \frac{4}{7}$
12. $\frac{4}{9} + \frac{2}{3} = 1\frac{1}{9}$
13. $\frac{2}{3} \cdot \frac{9}{10} = \frac{3}{5}$
14. $\frac{3}{5} \cdot \frac{5}{8} = \frac{3}{8}$
15. $8 - \frac{1}{7} = \frac{55}{7} = 7\frac{6}{7}$
16. $\frac{1}{6} + \frac{3}{8} = \frac{13}{24}$

17. **Stretch Your Thinking** Write and solve a word problem that requires multiplying two mixed numbers.

Possible answer: Taylor worked $6\frac{5}{6}$ hours doing yard work one weekend. The next weekend, he worked $1\frac{1}{2}$ times as long as he did the previous weekend. How many hours did Taylor work on the second weekend? $10\frac{1}{4}$ hours

3-9 Homework

Name _____ Date _____

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

1 $\frac{4}{5} \cdot 6 = x$

Predict: x (<) 6

Compute: $x =$ $4\frac{4}{5}$

2 $1\frac{1}{9} \cdot 6 = x$

Predict: x (>) 6

Compute: $x =$ $6\frac{2}{3}$

3 $\frac{10}{10} \cdot 6 = x$

Predict: x (=) 6

Compute: $x =$ 6

4 $\frac{2}{2} \cdot \frac{5}{6} = x$

Predict: x (=) $\frac{5}{6}$

Compute: $x =$ $\frac{5}{6}$

5 $\frac{5}{6} \cdot \frac{5}{6} = x$

Predict: x (<) $\frac{5}{6}$

Compute: $x =$ $\frac{25}{36}$

6 $1\frac{1}{3} \cdot \frac{5}{6} = x$

Predict: x (>) $\frac{5}{6}$

Compute: $x =$ $1\frac{1}{9}$

Solve. *Show your work.*

7 James is $1\frac{3}{7}$ times as tall as his brother. His brother is $3\frac{1}{2}$ feet tall.

Is James's height more or less than $3\frac{1}{2}$ feet?

more

How tall is James?

5 feet

8 South Middle School has 750 students. North Middle School has $\frac{13}{15}$ times as many students as South.

Does North Middle School have more or fewer than 750 students?

fewer

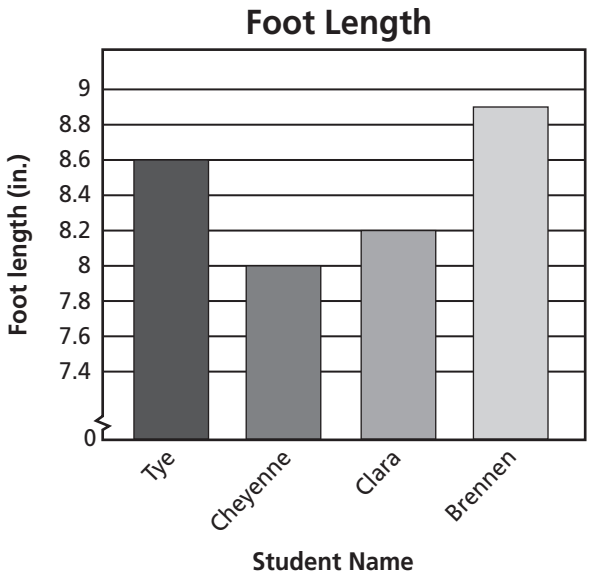
How many students attend North Middle School?

650 students

3-9 Remembering

Name _____ Date _____

Perry measured the foot length of four friends for a science fair experiment. Then, he made a bar graph to display his results.



1. How much longer is Brennen's foot than Clara's foot?

   0.7 inch

2. What is the difference between the longest foot and the shortest foot?

   0.9 inch

Solve.

3. $\frac{7}{8} \cdot \frac{4}{9}$ $\frac{7}{18}$

4. $11 - \frac{3}{4}$ $10\frac{1}{4}$

5. $\frac{4}{5} + \frac{7}{10}$ $\frac{15}{10} = 1\frac{1}{2}$

6. $\frac{9}{12} - \frac{5}{12}$ $\frac{1}{3}$

7. $\frac{7}{15} + \frac{2}{3}$ $\frac{17}{15} = 1\frac{2}{15}$

8. $\frac{5}{6} \cdot \frac{9}{11}$ $\frac{15}{22}$

Complete each fraction box.

$\frac{7}{12}$ and $\frac{5}{6}$	
>	$\frac{5}{6} > \frac{7}{12}$ or $\frac{10}{12} > \frac{7}{12}$
+	$\frac{5}{6} + \frac{7}{12} = \frac{10}{12} + \frac{7}{12} = \frac{17}{12} = 1\frac{5}{12}$
−	$\frac{5}{6} - \frac{7}{12} = \frac{10}{12} - \frac{7}{12} = \frac{3}{12} = \frac{1}{4}$
·	$\frac{5}{6} \cdot \frac{7}{12} = \frac{35}{72}$

$\frac{4}{5}$ and $\frac{2}{3}$	
>	$\frac{4}{5} > \frac{2}{3}$ or $\frac{12}{15} > \frac{10}{15}$
+	$\frac{4}{5} + \frac{2}{3} = \frac{12}{15} + \frac{10}{15} = \frac{22}{15} = 1\frac{7}{15}$
−	$\frac{4}{5} - \frac{2}{3} = \frac{12}{15} - \frac{10}{15} = \frac{2}{15}$
·	$\frac{4}{5} \cdot \frac{2}{3} = \frac{8}{15}$

9. **Stretch Your Thinking** Write two multiplication equations using fractions and mixed numbers. Write one equation that will have a product greater than the first factor. Then write another equation that will have a product less than the first factor.

   Possible answer: $1\frac{4}{9} \cdot 2\frac{3}{8} = 3\frac{31}{72}$; $3\frac{1}{8} \cdot \frac{2}{3} = \frac{25}{12} = 2\frac{1}{12}$

3-10 Homework

Name _____ Date _____

Divide

1. $5 \div 6 =$ $\frac{5}{6}$
2. $9 \div \frac{1}{5} =$ 45
3. $33 \div 30 =$ $\frac{11}{10} = 1\frac{1}{10}$
4. $8 \div \frac{1}{6} =$ 48
5. $3 \div 10 =$ $\frac{3}{10}$
6. $4 \div \frac{1}{9} =$ 36
7. $100 \div \frac{1}{6} =$ 600
8. $1 \div 100 =$ $\frac{1}{100}$
9. $\frac{1}{5} \div 8 =$ $\frac{1}{40}$
10. $\frac{1}{8} \div 7 =$ $\frac{1}{56}$
11. $\frac{1}{2} \div 9 =$ $\frac{1}{18}$
12. $\frac{1}{3} \div 5 =$ $\frac{1}{15}$

Solve. *Show your work.*

13. Alexander is dividing oranges into eighths. He has 5 oranges. How many eighths will he have?

    40 eighths

14. Carrie has 32 ounces of ice cream to divide equally among 10 people. How much ice cream will each person get?

    $3\frac{1}{5}$ ounces

15. Nayati wants to swim 50 miles this school year. She plans to swim $\frac{1}{4}$ mile each day. How many days will it take her to swim 50 miles?

    200 days

16. Eric has $\frac{1}{3}$ of a watermelon to share equally with 3 friends. How much will each person get?

    $\frac{1}{12}$ watermelon

17. A gardener needs to pack 16 pounds of beans into 20 bags. He wants all the bags to weigh about the same. About how much will each bag weigh?

    $\frac{4}{5}$ pound

3-10 Remembering

Name _____ Date _____

Add or subtract.

1. $2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$

2. $4\frac{2}{3} + 1\frac{5}{9} = 6\frac{2}{9}$

3. $10\frac{1}{2} - 3\frac{4}{5} = 6\frac{7}{10}$

4. $7 - 2\frac{1}{6} = 4\frac{5}{6}$

5. $3\frac{2}{5} + 4\frac{5}{6} = 8\frac{7}{30}$

6. $8\frac{1}{3} + 1\frac{3}{4} = 10\frac{1}{12}$

Complete each fraction box.

7.

$\frac{2}{5}$ and $\frac{2}{7}$	
>	$\frac{2}{5} > \frac{2}{7}$ or $\frac{14}{35} > \frac{10}{35}$
+	$\frac{2}{5} + \frac{2}{7} = \frac{14}{35} + \frac{10}{35} = \frac{24}{35}$
−	$\frac{2}{5} - \frac{2}{7} = \frac{14}{35} - \frac{10}{35} = \frac{4}{35}$
·	$\frac{2}{5} \cdot \frac{2}{7} = \frac{4}{35}$

8.

$\frac{5}{6}$ and $\frac{6}{7}$	
>	$\frac{6}{7} > \frac{5}{6}$ or $\frac{36}{42} > \frac{35}{42}$
+	$\frac{6}{7} + \frac{5}{6} = \frac{36}{42} + \frac{35}{42} = \frac{71}{42} = 1\frac{29}{42}$
−	$\frac{6}{7} - \frac{5}{6} = \frac{36}{42} - \frac{35}{42} = \frac{1}{42}$
·	$\frac{6}{7} \cdot \frac{5}{6} = \frac{30}{42} = \frac{5}{7}$

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

9. $\frac{2}{3} \cdot 5 = x$

Predict: x (<) 5

Compute: $x =$ $3\frac{1}{3}$

10. $\frac{3}{3} \cdot 5 = x$

Predict: x (=) 5

Compute: $x =$ 5

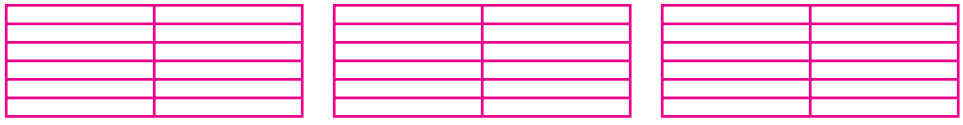
11. $1\frac{1}{6} \cdot 5 = x$

Predict: x (>) 5

Compute: $x =$ $5\frac{5}{6}$

12. **Stretch Your Thinking** Draw a diagram to show how many twelfths there are in 3. Describe a situation in which you would need to know how many twelfths there are in 3.

Possible answer: An inch is $\frac{1}{12}$ of a foot, so the number of inches in 3 feet is the number of twelfths in 3.



3-11 Homework

Name _____ Date _____

1. Consider the division problem $\frac{1}{2} \div 3$.

   Describe a situation this division could represent.

   Situations will vary.

   Draw a diagram to represent the division. Then find the solution.

   $\frac{1}{6}$; Diagrams will vary. Check students' work.

Write an equation. Then solve. Equations may vary. *Show your work.*

2. A rectangle has an area of 12 square feet and a length of 5 feet. What is its width?

   $5 \cdot w = 12$; $2\frac{2}{5}$ feet

3. A tortoise must walk $\frac{1}{12}$ mile to visit a friend. He plans to break the journey into four equal parts with breaks in between. How long will each part of his journey be?

   $x = \frac{1}{12} \div 4$; $\frac{1}{48}$ mile

4. Harry worked 7 hours last week. This is $\frac{1}{3}$ as many hours as Aidan worked. How many hours did Aidan work?

   $\frac{1}{3} \cdot a = 7$; 21 hours

5. Lin is a camp counselor. She is making small bags of trail mix for campers to take on a hike. She has 2 pounds of raisins and is putting $\frac{1}{8}$ pound in each bag. How many bags can she fill before she runs out of raisins?

   $x = 2 \div \frac{1}{8}$; 16 bags

6. Mr. Ramirez bought $\frac{1}{4}$ pounds of cashews. He divided the cashews equally among his three children. How much did each child get?

   $x = \frac{1}{4} \div 3$; $\frac{1}{12}$ pound

3-11 Remembering

Name _____ Date _____

Add or subtract.

1. $1\frac{1}{8} + 4\frac{2}{3} = 5\frac{19}{24}$
2. $6\frac{1}{4} - 4\frac{5}{6} = 1\frac{5}{12}$
3. $9\frac{1}{3} + 7\frac{8}{9} = 17\frac{2}{9}$
4. $5\frac{2}{7} + 5\frac{11}{14} = 11\frac{1}{14}$
5. $4 - 2\frac{2}{5} = 1\frac{3}{5}$
6. $6\frac{5}{8} + 3\frac{1}{2} = 10\frac{1}{8}$

Predict whether the product will be greater than, less than, or equal to the second factor. Then compute the product. Predictions may vary.

7. $\frac{5}{5} \cdot 9 = x$
   Predict: x (=) 9
   Compute: $x =$ 9
8. $\frac{7}{8} \cdot 9 = x$
   Predict: x (<) 9
   Compute: $x =$ $7\frac{7}{8}$
9. $1\frac{3}{5} \cdot 9 = x$
   Predict: x (>) 9
   Compute: $x =$ $14\frac{2}{5}$
10. $1\frac{1}{2} \cdot \frac{4}{5} = x$
    Predict: x (>) $\frac{4}{5}$
    Compute: $x =$ $1\frac{1}{5}$
11. $\frac{6}{6} \cdot \frac{4}{5} = x$
    Predict: x (=) $\frac{4}{5}$
    Compute: $x =$ $\frac{4}{5}$
12. $\frac{2}{5} \cdot \frac{4}{5} = x$
    Predict: x (<) $\frac{4}{5}$
    Compute: $x =$ $\frac{8}{25}$

Divide.

13. $6 \div \frac{1}{4} =$ 24
14. $2 \div 3 =$ $\frac{2}{3}$
15. $10 \div 3 =$ $3\frac{1}{3}$
16. $200 \div \frac{1}{4} =$ 800
17. $\frac{1}{4} \div 8 =$ $\frac{1}{32}$
18. $\frac{1}{7} \div 6 =$ $\frac{1}{42}$

19. **Stretch Your Thinking** Harrison is playing a board game that has a path of 100 spaces. After his first turn, he is $\frac{1}{5}$ of the way along the spaces. On his second turn, he moves $\frac{1}{4}$ fewer spaces than he moved on his first turn. On his third turn, he moves $1\frac{1}{4}$ times as many spaces than he moved on his first turn. What space is he on after three turns?

60

3-12 Homework

Name _____ Date _____

Solve.

1. $5 \cdot \frac{1}{3} =$ $\frac{5}{3}$
2. $5 \div \frac{1}{3} =$ 15
3. $\frac{1}{8} \div 2 =$ $\frac{1}{16}$
4. $27 \div 10 =$ $2\frac{7}{10}$
5. $5 \div \frac{1}{100} =$ 500
6. $12 \cdot \frac{1}{9} =$ $1\frac{1}{3}$
7. $\frac{3}{5} \cdot \frac{10}{27} =$ $\frac{2}{9}$
8. $16 \div \frac{1}{4} =$ 64
9. $\frac{1}{5} \div 10 =$ $\frac{1}{50}$
10. $10 \div \frac{1}{5} =$ 50
11. $\frac{1}{8} \cdot 14 =$ $1\frac{3}{4}$
12. $18 \div 20 =$ $\frac{9}{10}$

Tell whether you need to multiply or divide. Then solve. *Show your work.*

Equations will vary. Possible equations are given.

13. A dime weighs about $\frac{1}{12}$ ounce. Jody has 1 pound (16 ounces) of dimes. About many dimes does she have?

    Divide; 192 dimes

14. Maddie has 180 coins. Of these coins, $\frac{1}{12}$ are dimes. About how many dimes does she have?

    Multiply; 15 dimes

15. A rectangle has length 3 feet and width $\frac{1}{4}$ foot. What is the area of the rectangle?

    Multiply; $\frac{3}{4}$ square foot

16. A rectangle has area 3 square feet and width $\frac{1}{2}$ foot. What is the length of the rectangle?

    Divide; 6 feet

17. Nisha wants to study 5 hours for the spelling bee. If she studies $\frac{1}{3}$ hour per night, how many nights will she have to study?

    Divide; 15 nights

3-12 Remembering

Name _____ Date _____

Multiply.

1. $134 \cdot 5 =$ 670
2. $44 \cdot 21 =$ 924
3. $7 \cdot 57 =$ 399
4. $4{,}507 \cdot 3 =$ 13,521
5. $36 \cdot 76 =$ 2,736
6. $1{,}928 \cdot 6 =$ 11,568

Divide.

7. $\frac{1}{9} \div 2 =$ $\frac{1}{18}$
8. $100 \div \frac{1}{3} =$ 300
9. $\frac{1}{5} \div 4 =$ $\frac{1}{20}$
10. $4 \div 5 =$ $\frac{4}{5}$
11. $12 \div 5 =$ $2\frac{2}{5}$
12. $8 \div \frac{1}{7} =$ 56

Write an equation. Then solve. Equations may vary.

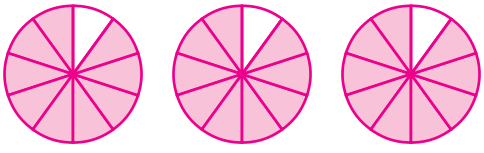
Show your work.

13. Marc is running 5 kilometers at track practice. He decides to break the run into 3 equal lengths. How long will each length be?

$x = 5 \div 3$; $1\frac{2}{3}$ km

14. **Stretch Your Thinking** Using a whole number and a fraction as factors, write a multiplication equation with a product less than the whole number factor. Draw a picture to show how the product is less than the whole number factor.

Possible answer: $\frac{9}{10} \cdot 3 = 2\frac{7}{10}$



3-13 Homework

Name _____ Date _____

Solve. *Show your work.*

1. Dan's Ice Cream comes in cartons of two sizes. The large carton holds $4\frac{1}{2}$ pounds. The small carton holds $1\frac{3}{4}$ pounds less. How much ice cream does the small carton hold?

   $2\frac{3}{4}$ pounds

2. Mac picked four baskets of blueberries. The weights of the berries in pounds are given below. Order the weights from lightest to heaviest.

   $\frac{5}{4}$ $\frac{9}{10}$ $\frac{4}{5}$ $\frac{13}{20}$

   $\frac{13}{20}$, $\frac{4}{5}$, $\frac{9}{10}$, $\frac{5}{4}$

3. Four cones of Dan's Ice Cream hold $\frac{1}{2}$ pound. How much ice cream does each cone hold?

   $\frac{1}{8}$ pound

4. If a dish of ice cream holds $\frac{1}{4}$ pound, how many dishes can you get from a $4\frac{1}{2}$-pound carton of Dan's Ice Cream?

   18 dishes

Solve. Give your answer in simplest form.

5. $3 \div \frac{1}{5} =$ 15

6. $1\frac{3}{4} + \frac{11}{16} =$ $2\frac{7}{16}$

7. $\frac{9}{14} \cdot 2\frac{1}{3} =$ $1\frac{1}{2}$

8. $2\frac{3}{5} \cdot 6 =$ $15\frac{3}{5}$

9. $\frac{1}{3} + \frac{3}{5} =$ $\frac{14}{15}$

10. $\frac{5}{6} + \frac{8}{9} =$ $1\frac{13}{18}$

11. $\frac{1}{8} \div 4 =$ $\frac{1}{32}$

12. $\frac{2}{5} - \frac{1}{10} =$ $\frac{3}{10}$

13. $3\frac{5}{7} - 1\frac{1}{2} =$ $2\frac{3}{14}$

14. $\frac{7}{8} \cdot \frac{2}{7} =$ $\frac{1}{4}$

3-13 Remembering

Name _____ Date _____

Use benchmarks of 0, $\frac{1}{2}$, and 1 to estimate the sum or difference. Then find the actual sum or difference.

1. $\frac{5}{10} + \frac{4}{9}$
   Estimate: 1
   Sum: $\frac{85}{90}$ or $\frac{17}{18}$

2. $\frac{13}{14} - \frac{3}{7}$
   Estimate: $\frac{1}{2}$
   Difference: $\frac{1}{2}$

3. $\frac{8}{9} - \frac{7}{8}$
   Estimate: 0
   Difference: $\frac{1}{72}$

4. $\frac{13}{14} + \frac{3}{4}$
   Estimate: 2
   Sum: $1\frac{19}{28}$

Write an equation. Then solve. Equations may vary. *Show your work.*

5. A rectangle has an area of 20 square feet and a length of 6 feet. What is its width?
   $6 \cdot w = 20$; $3\frac{1}{3}$ feet

6. Bailey attends gymnastics practice for 8 hours each week. This is $\frac{1}{4}$ the number of hours that the gym is open for practice. How many hours is the gym open for practice?
   $\frac{1}{4} \cdot a = 8$; 32 hours

Solve.

7. $\frac{1}{4} \div 3 =$ $\frac{1}{12}$

8. $\frac{1}{4} \cdot 3 =$ $\frac{3}{4}$

9. $14 \cdot \frac{1}{6} =$ $2\frac{1}{3}$

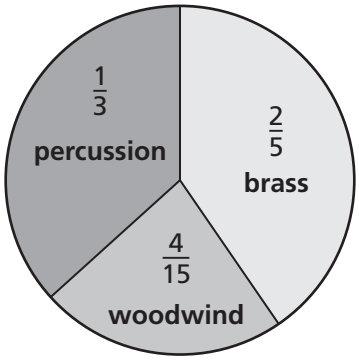
10. **Stretch Your Thinking** How is solving $\frac{1}{8} \div 5$ different from solving $\frac{1}{8} \cdot 5$?
    Possible answer: To solve $\frac{1}{8} \div 5$, multiply $\frac{1}{8}$ by the reciprocal of 5: $\frac{1}{8} \cdot \frac{1}{5} = \frac{1}{40}$. To solve $\frac{1}{8} \cdot 5$, first rewrite 5 as $\frac{5}{1}$. Then, multiply the two fractions: $\frac{1}{8} \cdot \frac{5}{1} = \frac{5}{8}$.

3-14 Homework

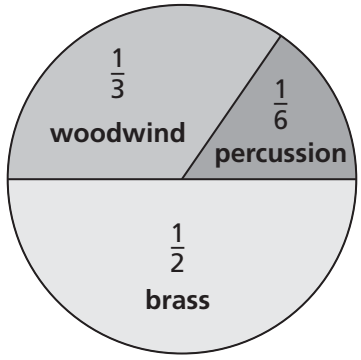
Name _____ Date _____

These graphs show the instruments in two different high school marching bands.

Carter School Marching Band



Reagan School Marching Band



Solve. Use the circle graphs.

Show your work.

1. The Reagan School Marching Band has three percussion musicians. How many musicians altogether are in the band?

   18 musicians

2. There are 30 musicians in the Carter School Marching Band. How many of them play brass instruments?

   12 musicians

Suppose both bands decide to combine and perform as one band.

3. What fraction of the band members will play a brass instrument?

   $\frac{7}{16}$

4. What fraction of the band members will play a percussion instrument?

   $\frac{13}{48}$

5. What fraction of the band members will play a woodwind instrument?

   $\frac{7}{24}$

3-14 Remembering

Name _____ Date _____

Solve. Explain how you know your answer is reasonable. *Show your work.*

Explanations may vary.

1. James's garden has a length of $12\frac{1}{4}$ feet and a width of $9\frac{2}{3}$ feet. What length of fencing will he need to surround his garden?

   Answer: $43\frac{5}{6}$ feet

   Why is the answer reasonable?

   $12\frac{1}{4}$ rounds to 12. $9\frac{2}{3}$ rounds to 10. The answer should be about 12 + 12 + 10 + 10, or 44

Solve.

2. $\frac{1}{11} \div 3 = \frac{1}{33}$

3. $6 \div \frac{1}{3} = 18$

4. $\frac{2}{3} \cdot \frac{5}{7} = \frac{10}{21}$

5. $\frac{1}{12} \div 5 = \frac{1}{60}$

6. $7 \cdot \frac{1}{8} = \frac{7}{8}$

7. $\frac{1}{5} \cdot 12 = 2\frac{2}{5}$

Solve. *Show your work.*

8. Kayla packs 4 boxes that weigh $\frac{1}{6}$ pound altogether. What does each box weigh?

   $\frac{1}{24}$ pound

9. Mrs. Blackwell put $4\frac{2}{3}$ grams on the scale during a lab in science class. Then, she added $2\frac{5}{6}$ grams to the scale. How many grams are on the scale in all?

   $7\frac{1}{2}$ grams

10. **Stretch Your Thinking** If you start with 1 and repeatedly multiply by $\frac{1}{2}$, will you reach 0? Explain why or why not.

    No. Possible explanation: Each fraction has twice the denominator as the fraction preceding it: 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, . . . The fraction will get closer and closer to zero without ever reaching zero.