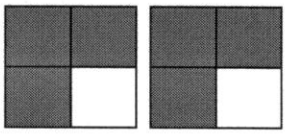
Name _____

5.NF.4

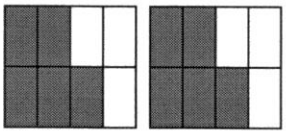
Using Models to Multiply Whole Numbers and Fractions

SKILLS

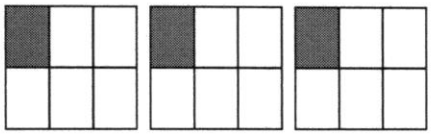
Use the models to multiply. Write each answer in simplest form.

1. 

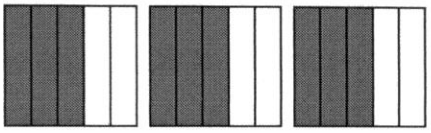
$\frac{3}{4} \times 2 =$ _____

2. 

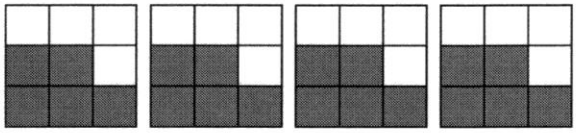
$\frac{5}{8} \times 2 =$ _____

3. 

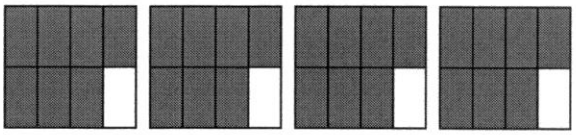
$\frac{1}{6} \times 3 =$ _____

4. 

$\frac{3}{5} \times 3 =$ _____

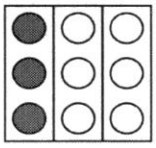
5. 

$\frac{5}{9} \times 4 =$ _____

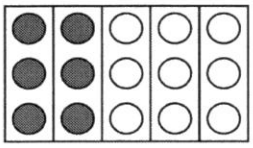
6. 

$\frac{7}{8} \times 4 =$ _____

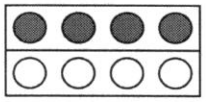
Use the models to find each product. Write each answer in simplest form.

7. 

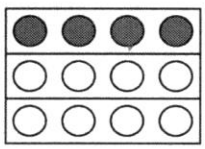
$9 \times \frac{1}{3} =$ _____

8. 

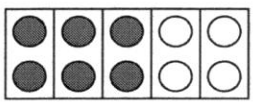
$15 \times \frac{2}{5} =$ _____

9. 

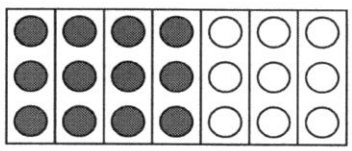
$8 \times \frac{1}{2} =$ _____

10. 

$12 \times \frac{1}{3} =$ _____

11. 

$10 \times \frac{3}{5} =$ _____

12. 

$21 \times \frac{4}{7} =$ _____

Name _____

5.NF.4

Using Models to Multiply Whole Numbers and Fractions

CRITICAL THINKING AND PROBLEM SOLVING

Examine each pattern, then complete the next problem in the pattern.

13. $\frac{1}{2} \times 2 = 1$

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

$\frac{1}{4} \times 4 = 1$

$\frac{1}{5} \times 5 = 1$

_____ × _____ = _____

14. $3 \times \frac{2}{3} = 2$

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

$9 \times \frac{2}{3} = 6$

$12 \times \frac{2}{3} = 8$

_____ × _____ = _____

15. $2 \times \frac{1}{2} = 1$

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

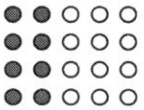
$6 \times \frac{1}{2} = 3$

$8 \times \frac{1}{2} = 4$

_____ × _____ = _____

Use the given models to solve each problem. Write each answer in simplest form.

16. A dog that weighs 20 pounds on Earth would weigh $\frac{2}{5}$ of that on Mars. How much would it weigh on Mars?



The dog would weigh _____ pounds on Mars.

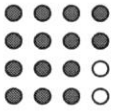
17. A cat that weighs 15 pounds on Earth would weigh $\frac{2}{5}$ of that on Mars. How much would it weigh on Mars?

The cat would weigh _____ pounds on Mars.

18. A cat that weighs 12 pounds on Earth would weigh $\frac{1}{6}$ of that on moon. How much would it weigh on the moon?

The cat would weigh _____ pounds on the moon.

19. A dog that weighs 16 pounds on Earth would weigh $\frac{7}{8}$ of that on Venus. How much would it weigh on Venus?



The dog would weigh _____ pounds on Venus.

Name _____

5.NF.4

Multiplying Whole Numbers and Fractions

SKILLS

Rewrite whole number as a fraction.
Multiply numerators and multiply denominators.
Find the products.
Simplify.

Multiply. Write each answer in simplest form.

1. $\frac{1}{4} \times 6 =$

2. $\frac{2}{3} \times 9 =$

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

4. $8 \times \frac{1}{6} =$

5. $7 \times \frac{3}{4} =$

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

7. $\frac{7}{10} \times 4 =$

8. $\frac{5}{12} \times 2 =$

9. $\frac{3}{8} \times 8 =$

10. $3 \times \frac{5}{9} =$

11. $4 \times \frac{1}{6} =$

12. $7 \times \frac{2}{5} =$

13. $\frac{2}{3} \times 5 =$

14. $7 \times \frac{5}{6} =$

15. $\frac{5}{6} \times 9 =$

16. $\frac{3}{5} \times 10 =$

17. $\frac{5}{6} \times 12 =$

18. $12 \times \frac{3}{8} =$

19. $\frac{4}{5} \times 10 =$

20. $12 \times \frac{3}{4} =$

21. $\frac{5}{8} \times 4 =$

22. $6 \times \frac{2}{5} =$

23. $\frac{7}{8} \times 6 =$

24. $12 \times \frac{4}{5} =$

Name _____ 5.NF.4

Multiplying Whole Numbers and Fractions

CRITICAL THINKING AND PROBLEM SOLVING

Pizza: The first pizza with tomatoes and cheese was created in Italy in 1889 for Queen Margherita. The pizzamaker, Raffaele Esposito, used ingredients that matched the colors of the Italian flag: tomatoes (red), mozzarella cheese (white), and basil leaves (green).

You are making pizza for a party. The ingredients needed for one pizza are listed below. Determine how much of each item you will need to make 8 pizzas.

Cheese and Pepperoni Pizza	To find the amount needed for 8 pizzas:
1 crust	Multiply 1×8.
$\frac{1}{2}$ cup pizza sauce	Multiply $\frac{1}{2} \times 8$.
$\frac{3}{4}$ cup of cheese	Multiply $\frac{3}{4} \times 8$.
$\frac{1}{4}$ cup of pepperoni	Multiply $\frac{1}{4} \times 8$.
peppers, onions, mushrooms, (or your favorite toppings)	Write your answers below.

Amount needed for 8 pizzas:

25. Crust _____

26. Pizza sauce _____

27. Cheese _____

28. Pepperoni _____

29. The soccer team practices $\frac{3}{4}$ hour after school Monday through Thursday. How many hours do they practice each week?

They practice _____ hours each week.

30. $\frac{4}{5}$ of the students ordered cheeseburgers for lunch. If there are 25 students in the class, how many ordered cheeseburgers?

Cheeseburgers were ordered by _____ students.

31. You practiced on your drums for $\frac{1}{2}$ hour every day this week. How many hours did you practice this week?

You practiced _____ hours this week.

32. You ran $\frac{3}{4}$ mile every day for two weeks. How many miles did you run?

You ran _____ miles during the two weeks.

Name _____

5.NF.4

Multiplying Fractions

SKILLS

Find each product. Write each answer in simplest form.

1. $\frac{3}{8} \times \frac{1}{2} =$

2. $\frac{2}{5} \times \frac{3}{7} =$

3. $\frac{3}{4} \times \frac{5}{8} =$

4. $\frac{1}{6} \times \frac{3}{5} =$

5. $\frac{2}{9} \times \frac{1}{3} =$

6. $\frac{1}{4} \times \frac{1}{4} =$

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

8. $\frac{3}{5} \times \frac{2}{7} =$

9. $\frac{5}{8} \times \frac{1}{2} =$

10. $\frac{1}{3} \times \frac{1}{6} =$

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

12. $\frac{2}{5} \times \frac{4}{5} =$

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

14. $\frac{5}{9} \times \frac{3}{8} =$

15. $\frac{3}{10} \times \frac{5}{7} =$

16. $\frac{6}{7} \times \frac{4}{9} =$

17. $\frac{4}{5} \times \frac{5}{6} =$

18. $\frac{1}{9} \times \frac{3}{4} =$

19. $\frac{7}{8} \times \frac{1}{6} =$

20. $\frac{8}{10} \times \frac{3}{4} =$

21. $\frac{2}{5} \times \frac{7}{8} =$

22. $\frac{2}{3} \times \frac{6}{7} =$

23. $\frac{1}{8} \times \frac{4}{9} =$

24. $\frac{5}{8} \times \frac{3}{10} =$

25. $\frac{4}{7} \times \frac{3}{8} =$

26. $\frac{9}{10} \times \frac{2}{3} =$

27. $\frac{2}{5} \times \frac{8}{9} =$

28. $\frac{4}{5} \times \frac{3}{8} =$

Name _____ 5.NF.4

Multiplying Fractions

CRITICAL THINKING AND PROBLEM SOLVING

Is each product correct? If you choose NO, give the correct product and tell why you think it was incorrect. An example is given

$\frac{2}{3} \times \frac{1}{5} = \frac{13}{15}$ YES The correct product should be $\frac{2}{15}$. When you multiply

(NO) fractions, the numerators are multiplied.

$2 \times 1 = 2$, not 13.

29. $\frac{2}{5} \times \frac{1}{2} = \frac{4}{10}$ YES _____

NO _____

_____

30. $\frac{7}{8} \times \frac{8}{7} = 1$ YES _____

NO _____

_____

CHOCOLATE

The average American eats $3\frac{9}{13}$ ounces of chocolate in a week!

31. A recipe for chocolate chip cookies contains a 12 ounce $\left(\frac{3}{4} \text{ pound}\right)$ bag of chocolate chips. If the recipe makes 4 dozen cookies and you eat 1 dozen or $\frac{1}{4}$ of them during the week, how much chocolate did you eat? (Multiply $\frac{3}{4} \times \frac{1}{4}$.)

The cookies you ate contain _____ pound of chocolates.

32. A chocolate cake contains 4 ounces $\left(\frac{1}{4} \text{ pound}\right)$ of chocolate. If you eat $\frac{1}{4}$ of the cake during the week, how much chocolate did you eat? (Multiply $\frac{1}{4} \times \frac{1}{4}$.)

The cake you ate contains _____ pound of chocolate.

33. Do you think you eat $3\frac{9}{13}$ ounces of chocolate in a week? YES NO

Name _____

5.NF.4

Using Simplification to Multiply Fractions

SKILLS

Use common factors to multiply.

$$\frac{7}{8} \times \frac{2}{5} = \frac{7 \times \overset{1}{\cancel{2}}}{\underset{4}{\cancel{8}} \times 5} \quad \text{Divide common factor.}$$

$$= \frac{7 \times 1}{4 \times 5} \quad \text{Rewrite.}$$

$$= \frac{7}{20} \quad \text{Multiply.}$$

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

2. $\frac{3}{4} \times \frac{6}{7} =$

3. $\frac{3}{8} \times \frac{4}{5} =$

4. $\frac{7}{10} \times \frac{2}{7} =$

5. $\frac{1}{4} \times \frac{8}{9} =$

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

7. $\frac{4}{15} \times \frac{5}{7} =$

8. $\frac{2}{9} \times \frac{1}{4} =$

9. $\frac{11}{12} \times \frac{6}{7} =$

10. $\frac{5}{8} \times \frac{3}{10} =$

11. $\frac{3}{4} \times \frac{2}{3} =$

12. $\frac{2}{9} \times \frac{3}{4} =$

13. $\frac{1}{7} \times \frac{7}{10} =$

14. $\frac{2}{5} \times \frac{1}{10} =$

15. $\frac{3}{8} \times \frac{1}{3} =$

16. $\frac{5}{14} \times \frac{7}{10} =$

17. $\frac{4}{7} \times \frac{1}{4} =$

18. $\frac{4}{9} \times \frac{3}{8} =$

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

20. $\frac{9}{10} \times \frac{1}{6} =$

21. $\frac{5}{6} \times \frac{7}{10} =$

22. $\frac{4}{11} \times \frac{1}{2} =$

23. $\frac{5}{9} \times \frac{3}{10} =$

24. $\frac{7}{8} \times \frac{2}{7} =$

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

26. $\frac{3}{8} \times \frac{4}{7} =$

27. $\frac{6}{7} \times \frac{1}{3} =$

28. $\frac{5}{9} \times \frac{9}{10} =$

Name _____

5.NF.4

Using Simplification to Multiply Fractions

CRITICAL THINKING AND PROBLEM SOLVING

Enter the fraction needed to make each product correct.

29. $\frac{4}{5} \times$ _____ $= \frac{8}{15}$

30. $\frac{3}{10} \times$ _____ $= \frac{6}{30} = \frac{1}{5}$

31. $\frac{2}{5} \times$ _____ $= \frac{4}{15}$

32. $\frac{1}{5} \times$ _____ $= \frac{1}{10}$

33. $\frac{1}{3} \times$ _____ $= \frac{1}{12}$

34. $\frac{3}{7} \times$ _____ $= \frac{6}{21} = \frac{2}{7}$

35. $\frac{2}{7} \times$ _____ $= \frac{6}{7}$

36. $\frac{2}{3} \times$ _____ $= \frac{4}{9}$

37. $\frac{4}{9} \times$ _____ $= \frac{4}{18} = \frac{2}{9}$

SUPER MYSTERY QUESTIONS

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

39. $\frac{2}{3} \times$ _____ $= \frac{4}{7}$

40. $\frac{2}{5} \times$ _____ $= \frac{1}{3}$

41. Your family owns a $\frac{3}{4}$ acre lot. $\frac{2}{3}$ of it is woods. How much of your family's lot is woods?

Woods cover _____ acre of your family's land.

42. If a motorcycle uses about $\frac{3}{4}$ gallon of fuel each hour, how much does it use in $\frac{1}{2}$ hour?

It uses _____ gallon of fuel in $\frac{1}{2}$ hour.

43. You live $\frac{9}{10}$ of a mile from school. You have walked $\frac{2}{3}$ of the way. How far have you walked?

You have walked _____ mile.

44. You have $\frac{7}{8}$ gallon of juice in the refrigerator. You and your friends drank $\frac{3}{7}$ of that. How much did you and your friends drink? How much is left?

You and your friends drank _____ gallon. There is _____ gallon left.

45. A three-toed sloth can travel about $\frac{3}{20}$ mile per hour. How far could it go in $\frac{4}{5}$ of an hour?

It could go _____ mile.