

Name _____

Date _____

1. Draw a line plot for the following data measured in inches:

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

2. Explain how you decided to divide your wholes into fractional parts and how you decided where your number scale should begin and end.

Name _____

Date _____

1. Draw a picture that shows the division expression. Then, write an equation and solve.

a. $3 \div 9$

b. $4 \div 3$

2. Fill in the blanks to make true number sentences.

a. $21 \div 8 = \underline{\quad}$

b. $\frac{7}{4} = \underline{\quad} \div \underline{\quad}$

c. $4 \div 9 = \underline{\quad}$

d. $1\frac{2}{7} = \underline{\quad} \div \underline{\quad}$

Name _____

Date _____

A baker made 9 cupcakes, each a different type. Four people want to share them equally. How many cupcakes will each person get?

Fill in the chart to show how to solve the problem.

Division Expression	Unit Forms	Fractions and Mixed numbers	Standard Algorithm

Draw to show your thinking:

Name _____

Date _____

Matthew and his 3 siblings are weeding a flower bed with an area of 9 square yards. If they share the job equally, how many square yards of the flower bed will each child need to weed? Use a tape diagram to show your thinking.

Name _____

Date _____

A grasshopper covered a distance of 5 yards in 9 equal hops. How many yards did the grasshopper travel on each hop?

a. Draw a picture to support your work.

b. How many yards did the grasshopper travel after hopping twice?

A

Correct _____

Write the Fraction, Whole Number, or Mixed Number.

1	$1 \div 2 =$		23	$6 \div 2 =$	
2	$1 \div 3 =$		24	$7 \div 2 =$	
3	$1 \div 8 =$		25	$8 \div 8 =$	
4	$2 \div 2 =$		26	$9 \div 8 =$	
5	$2 \div 3 =$		27	$15 \div 8 =$	
6	$3 \div 3 =$		28	$8 \div 4 =$	
7	$3 \div 4 =$		29	$11 \div 4 =$	
8	$3 \div 10 =$		30	$15 \div 2 =$	
9	$3 \div 5 =$		31	$24 \div 5 =$	
10	$5 \div 5 =$		32	$17 \div 4 =$	
11	$6 \div 5 =$		33	$20 \div 3 =$	
12	$7 \div 5 =$		34	$13 \div 6 =$	
13	$9 \div 5 =$		35	$30 \div 7 =$	
14	$2 \div 3 =$		36	$27 \div 8 =$	
15	$4 \div 4 =$		37	$49 \div 9 =$	
16	$5 \div 4 =$		38	$29 \div 6 =$	
17	$7 \div 4 =$		39	$47 \div 7 =$	
18	$4 \div 2 =$		40	$53 \div 8 =$	
19	$5 \div 2 =$		41	$67 \div 9 =$	
20	$10 \div 5 =$		42	$59 \div 6 =$	
21	$11 \div 5 =$		43	$63 \div 8 =$	
22	$13 \div 5 =$		44	$71 \div 9 =$	

B Improvement _____ # Correct _____

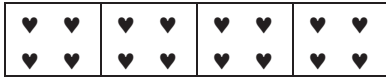
Write the Fraction, Whole Number, or Mixed Number.

1	$1 \div 3 =$		23	$15 \div 5 =$	
2	$1 \div 4 =$		24	$16 \div 5 =$	
3	$1 \div 10 =$		25	$6 \div 6 =$	
4	$5 \div 5 =$		26	$7 \div 6 =$	
5	$5 \div 6 =$		27	$11 \div 6 =$	
6	$3 \div 3 =$		28	$6 \div 3 =$	
7	$3 \div 7 =$		29	$8 \div 3 =$	
8	$3 \div 10 =$		30	$13 \div 2 =$	
9	$3 \div 4 =$		31	$23 \div 5 =$	
10	$4 \div 4 =$		32	$15 \div 4 =$	
11	$5 \div 4 =$		33	$19 \div 4 =$	
12	$2 \div 2 =$		34	$19 \div 6 =$	
13	$3 \div 2 =$		35	$31 \div 7 =$	
14	$4 \div 5 =$		36	$37 \div 8 =$	
15	$10 \div 10 =$		37	$50 \div 9 =$	
16	$11 \div 10 =$		38	$17 \div 6 =$	
17	$13 \div 10 =$		39	$48 \div 7 =$	
18	$10 \div 5 =$		40	$51 \div 8 =$	
19	$11 \div 5 =$		41	$68 \div 9 =$	
20	$13 \div 5 =$		42	$53 \div 6 =$	
21	$4 \div 2 =$		43	$61 \div 8 =$	
22	$5 \div 2 =$		44	$70 \div 9 =$	

Name _____

Date _____

1. Find the value of each of the following.



a. $\frac{1}{4}$ of 16 =

b. $\frac{3}{4}$ of 16 =

2. Out of 18 cookies, $\frac{2}{3}$ are chocolate chip. How many of the cookies are chocolate chip?

Name _____

Date _____

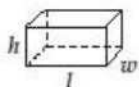
Solve using a tape diagram.

a. $\frac{3}{5}$ of 30

b. $\frac{3}{5}$ of a number is 30. What's the number?

- c. Mrs. Johnson baked 2 dozen cookies. Two-thirds of the cookies were oatmeal. How many oatmeal cookies did Mrs. Johnson bake?

Grade 5 Mathematics Reference Sheet

FORMULAS

Right Rectangular Prism

Volume = lwh

Volume = Bh

CONVERSIONS

1 centimeter = 10 millimeters

1 meter = 100 centimeters = 1,000 millimeters

1 kilometer = 1,000 meters

1 gram = 1,000 milligrams

1 kilogram = 1,000 grams

1 pound = 16 ounces

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

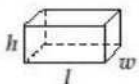
1 liter = 1,000 milliliters

1 kiloliter = 1,000 liters

1 mile = 5,280 feet

1 mile = 1,760 yards

Grade 5 Mathematics Reference Sheet

FORMULAS

Right Rectangular Prism

Volume = lwh

Volume = Bh

CONVERSIONS

1 centimeter = 10 millimeters

1 meter = 100 centimeters = 1,000 millimeters

1 kilometer = 1,000 meters

1 gram = 1,000 milligrams

1 kilogram = 1,000 grams

1 pound = 16 ounces

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 liter = 1,000 milliliters

1 kiloliter = 1,000 liters

1 mile = 5,280 feet

1 mile = 1,760 yards

Name _____

Date _____

Solve each problem in two different ways as modeled in the example.

Example: $\frac{2}{3} \times 6 = \frac{2 \times 6}{3} = \frac{12}{3} = 4$

$\frac{2}{3} \times 6 = \frac{2 \times \overset{2}{\cancel{6}}}{\cancel{3}_1} = 4$

a. $\frac{2}{3} \times 15$

$\frac{2}{3} \times 15$

b. $\frac{5}{4} \times 12$

$\frac{5}{4} \times 12$

Name _____ Date _____

1. Express 36 minutes as a fraction of an hour: 36 minutes = _____ hour

2. Solve.

a. $\frac{2}{3}$ feet = _____ inches

b. $\frac{2}{5}$ m = _____ cm

c. $\frac{5}{6}$ year = _____ months

Name _____

Date _____

1. Rewrite these expressions using words.

a. $\frac{3}{4} \times \left(2\frac{2}{5} - \frac{5}{6}\right)$

b. $2\frac{1}{4} + \frac{8}{3}$

2. Write an expression, and then solve.

Three less than one-fourth of the product of eight thirds and nine.

Name _____

Date _____

Use a tape diagram to solve.

$$\frac{2}{3} \text{ of } 5$$

Name _____

Date _____

In a classroom, $\frac{1}{6}$ of the students are wearing blue shirts and $\frac{2}{3}$ are wearing white shirts. There are 36 students in the class. How many students are wearing a shirt other than blue or white?

Name _____

Date _____

1. Solve. Draw a rectangular fraction model, and write a number sentence to show your thinking.

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

2. Ms. Sheppard cuts $\frac{1}{2}$ of a piece of construction paper. She uses $\frac{1}{6}$ of the piece to make a flower. What fraction of the sheet of paper does she use to make the flower?

A

Correct _____

Solve.

1	$\frac{1}{5} \times 2 =$		23	$\frac{5}{6} \times 12 =$	
2	$\frac{1}{5} \times 3 =$		24	$\frac{1}{3} \times 15 =$	
3	$\frac{1}{5} \times 4 =$		25	$\frac{2}{3} \times 15 =$	
4	$4 \times \frac{1}{5} =$		26	$15 \times \frac{2}{3} =$	
5	$\frac{1}{8} \times 3 =$		27	$\frac{1}{5} \times 15 =$	
6	$\frac{1}{8} \times 5 =$		28	$\frac{2}{5} \times 15 =$	
7	$\frac{1}{8} \times 7 =$		29	$\frac{4}{5} \times 15 =$	
8	$7 \times \frac{1}{8} =$		30	$\frac{3}{5} \times 15 =$	
9	$3 \times \frac{1}{10} =$		31	$15 \times \frac{3}{5} =$	
10	$7 \times \frac{1}{10} =$		32	$18 \times \frac{1}{6} =$	
11	$\frac{1}{10} \times 7 =$		33	$18 \times \frac{5}{6} =$	
12	$4 \div 2 =$		34	$\frac{5}{6} \times 18 =$	
13	$4 \times \frac{1}{2} =$		35	$24 \times \frac{1}{4} =$	
14	$6 \div 3 =$		36	$\frac{3}{4} \times 24 =$	
15	$\frac{1}{3} \times 6 =$		37	$32 \times \frac{1}{8} =$	
16	$10 \div 5 =$		38	$32 \times \frac{3}{8} =$	
17	$10 \times \frac{1}{5} =$		39	$\frac{5}{8} \times 32 =$	
18	$\frac{1}{3} \times 9 =$		40	$32 \times \frac{7}{8} =$	
19	$\frac{2}{3} \times 9 =$		41	$\frac{5}{9} \times 54 =$	
20	$\frac{1}{4} \times 8 =$		42	$63 \times \frac{7}{9} =$	
21	$\frac{3}{4} \times 8 =$		43	$56 \times \frac{3}{7} =$	
22	$\frac{1}{6} \times 12 =$		44	$\frac{6}{7} \times 49 =$	

B

Improvement _____

Correct _____

Solve.

1	$\frac{1}{7} \times 2 =$		23	$\frac{3}{4} \times 8 =$	
2	$\frac{1}{7} \times 3 =$		24	$\frac{1}{5} \times 15 =$	
3	$\frac{1}{7} \times 4 =$		25	$\frac{2}{5} \times 15 =$	
4	$4 \times \frac{1}{7} =$		26	$\frac{4}{5} \times 15 =$	
5	$\frac{1}{10} \times 3 =$		27	$\frac{3}{5} \times 15 =$	
6	$\frac{1}{10} \times 7 =$		28	$15 \times \frac{3}{5} =$	
7	$\frac{1}{10} \times 9 =$		29	$\frac{1}{3} \times 15 =$	
8	$9 \times \frac{1}{10} =$		30	$\frac{2}{3} \times 15 =$	
9	$3 \times \frac{1}{8} =$		31	$15 \times \frac{2}{3} =$	
10	$5 \times \frac{1}{8} =$		32	$24 \times \frac{1}{6} =$	
11	$\frac{1}{8} \times 5 =$		33	$24 \times \frac{5}{6} =$	
12	$10 \div 5 =$		34	$\frac{5}{6} \times 24 =$	
13	$10 \times \frac{1}{5} =$		35	$20 \times \frac{1}{4} =$	
14	$9 \div 3 =$		36	$\frac{3}{4} \times 20 =$	
15	$\frac{1}{3} \times 9 =$		37	$24 \times \frac{1}{8} =$	
16	$10 \div 2 =$		38	$24 \times \frac{3}{8} =$	
17	$10 \times \frac{1}{2} =$		39	$\frac{5}{8} \times 24 =$	
18	$\frac{1}{3} \times 6 =$		40	$24 \times \frac{7}{8} =$	
19	$\frac{2}{3} \times 6 =$		41	$\frac{5}{9} \times 63 =$	
20	$\frac{1}{6} \times 12 =$		42	$54 \times \frac{7}{9} =$	
21	$\frac{5}{6} \times 12 =$		43	$49 \times \frac{3}{7} =$	
22	$\frac{1}{4} \times 8 =$		44	$\frac{6}{7} \times 56 =$	

Name _____

Date _____

1. Solve. Draw a rectangular fraction model to explain your thinking. Then, write a number sentence.

$$\frac{1}{3} \text{ of } \frac{3}{7} =$$

2. In a cookie jar, $\frac{1}{4}$ of the cookies are chocolate chip and $\frac{1}{2}$ of the rest are peanut butter. What fraction of all the cookies is peanut butter?

Name _____

Date _____

1. Solve. Draw a rectangular fraction model to explain your thinking. Then, write a multiplication sentence.

a. $\frac{2}{3}$ of $\frac{3}{5} =$

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

2. A newspaper's cover page is $\frac{3}{8}$ text and photographs fill the rest. If $\frac{2}{5}$ of the text is an article about endangered species, what fraction of the cover page is the article about endangered species?

Name _____

Date _____

Solve and show your thinking with a tape diagram.

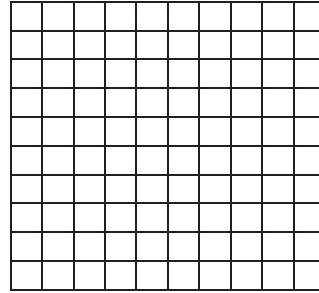
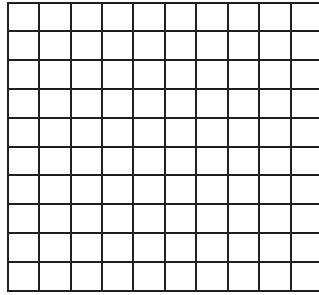
1. Three-quarters of the boats in the marina are white, $\frac{4}{7}$ of the remaining boats are blue, and the rest are red. If there are 9 red boats, how many boats are in the marina?

Name _____

Date _____

1. Multiply and model. Rewrite each expression as a number sentence with decimal factors.

a. $\frac{1}{10} \times 1.2$



2. Multiply.

a. $1.5 \times 3 =$ _____

b. $1.5 \times 0.3 =$ _____

c. $0.15 \times 0.3 =$ _____

A

Correct _____

Multiply, but don't simplify.

1	$\frac{1}{2} \times \frac{1}{2} =$		23	$\frac{2}{5} \times \frac{5}{3} =$	
2	$\frac{1}{2} \times \frac{1}{3} =$		24	$\frac{3}{5} \times \frac{5}{2} =$	
3	$\frac{1}{2} \times \frac{1}{4} =$		25	$\frac{1}{3} \times \frac{1}{3} =$	
4	$\frac{1}{2} \times \frac{1}{7} =$		26	$\frac{1}{3} \times \frac{2}{3} =$	
5	$\frac{1}{7} \times \frac{1}{2} =$		27	$\frac{2}{3} \times \frac{2}{3} =$	
6	$\frac{1}{3} \times \frac{1}{2} =$		28	$\frac{2}{3} \times \frac{3}{2} =$	
7	$\frac{1}{3} \times \frac{1}{3} =$		29	$\frac{2}{3} \times \frac{4}{3} =$	
8	$\frac{1}{3} \times \frac{1}{6} =$		30	$\frac{2}{3} \times \frac{5}{3} =$	
9	$\frac{1}{3} \times \frac{1}{5} =$		31	$\frac{3}{2} \times \frac{3}{5} =$	
10	$\frac{1}{5} \times \frac{1}{3} =$		32	$\frac{3}{4} \times \frac{1}{5} =$	
11	$\frac{1}{5} \times \frac{2}{3} =$		33	$\frac{3}{4} \times \frac{4}{5} =$	
12	$\frac{2}{5} \times \frac{2}{3} =$		34	$\frac{3}{4} \times \frac{5}{5} =$	
13	$\frac{1}{4} \times \frac{1}{3} =$		35	$\frac{3}{4} \times \frac{6}{5} =$	
14	$\frac{1}{4} \times \frac{2}{3} =$		36	$\frac{1}{4} \times \frac{6}{5} =$	
15	$\frac{3}{4} \times \frac{2}{3} =$		37	$\frac{1}{7} \times \frac{1}{7} =$	
16	$\frac{1}{6} \times \frac{1}{3} =$		38	$\frac{1}{8} \times \frac{3}{5} =$	
17	$\frac{5}{6} \times \frac{1}{3} =$		39	$\frac{5}{6} \times \frac{1}{4} =$	
18	$\frac{5}{6} \times \frac{2}{3} =$		40	$\frac{3}{4} \times \frac{3}{4} =$	
19	$\frac{5}{4} \times \frac{2}{3} =$		41	$\frac{2}{3} \times \frac{6}{6} =$	
20	$\frac{1}{5} \times \frac{1}{5} =$		42	$\frac{3}{4} \times \frac{6}{2} =$	
21	$\frac{2}{5} \times \frac{2}{5} =$		43	$\frac{7}{8} \times \frac{7}{9} =$	
22	$\frac{2}{5} \times \frac{3}{5} =$		44	$\frac{7}{12} \times \frac{9}{8} =$	

B

Improvement _____

Correct _____

Multiply, but don't simplify.

1	$\frac{1}{2} \times \frac{1}{3} =$		23	$\frac{3}{5} \times \frac{5}{4} =$	
2	$\frac{1}{2} \times \frac{1}{4} =$		24	$\frac{4}{5} \times \frac{5}{3} =$	
3	$\frac{1}{2} \times \frac{1}{5} =$		25	$\frac{1}{4} \times \frac{1}{4} =$	
4	$\frac{1}{2} \times \frac{1}{9} =$		26	$\frac{1}{4} \times \frac{3}{4} =$	
5	$\frac{1}{9} \times \frac{1}{2} =$		27	$\frac{3}{4} \times \frac{3}{4} =$	
6	$\frac{1}{5} \times \frac{1}{2} =$		28	$\frac{3}{4} \times \frac{4}{3} =$	
7	$\frac{1}{5} \times \frac{1}{3} =$		29	$\frac{3}{4} \times \frac{5}{4} =$	
8	$\frac{1}{5} \times \frac{1}{7} =$		30	$\frac{3}{4} \times \frac{6}{4} =$	
9	$\frac{1}{5} \times \frac{1}{3} =$		31	$\frac{4}{3} \times \frac{4}{6} =$	
10	$\frac{1}{3} \times \frac{1}{5} =$		32	$\frac{2}{3} \times \frac{1}{5} =$	
11	$\frac{1}{3} \times \frac{2}{5} =$		33	$\frac{2}{3} \times \frac{4}{5} =$	
12	$\frac{2}{3} \times \frac{2}{5} =$		34	$\frac{2}{3} \times \frac{5}{5} =$	
13	$\frac{1}{3} \times \frac{1}{4} =$		35	$\frac{2}{3} \times \frac{6}{5} =$	
14	$\frac{1}{3} \times \frac{3}{4} =$		36	$\frac{1}{3} \times \frac{6}{5} =$	
15	$\frac{2}{3} \times \frac{3}{4} =$		37	$\frac{1}{9} \times \frac{1}{9} =$	
16	$\frac{1}{3} \times \frac{1}{6} =$		38	$\frac{1}{5} \times \frac{3}{8} =$	
17	$\frac{2}{3} \times \frac{1}{6} =$		39	$\frac{3}{4} \times \frac{1}{6} =$	
18	$\frac{2}{3} \times \frac{5}{6} =$		40	$\frac{2}{3} \times \frac{2}{3} =$	
19	$\frac{3}{2} \times \frac{3}{4} =$		41	$\frac{3}{4} \times \frac{8}{8} =$	
20	$\frac{1}{5} \times \frac{1}{5} =$		42	$\frac{2}{3} \times \frac{6}{3} =$	
21	$\frac{3}{5} \times \frac{3}{5} =$		43	$\frac{6}{7} \times \frac{8}{9} =$	
22	$\frac{3}{5} \times \frac{4}{5} =$		44	$\frac{7}{12} \times \frac{8}{7} =$	

Name _____

Date _____

1. Multiply. Do at least one problem using unit form and at least one problem using fraction form.

a. $3.2 \times 1.4 =$

b. $1.6 \times 0.7 =$

c. $2.02 \times 4.2 =$

d. $2.2 \times 0.42 =$

Name _____

Date _____

1. Convert. Express your answer as a mixed number, if possible.

a. 5 in = _____ ft

b. 13 in = _____ ft

c. 9 oz = _____ lb

d. 18 oz = _____ lb

Name _____

Date _____

Convert. Express your answer as a mixed number.

a. $2\frac{1}{6}$ ft = _____ in

b. $3\frac{3}{4}$ ft = _____ yd

c. $2\frac{1}{2}$ c = _____ pt

d. $3\frac{2}{3}$ years = _____ months

A

Correct _____

Multiply.

1	$3 \times 2 =$		23	$0.6 \times 2 =$	
2	$3 \times 0.2 =$		24	$0.6 \times 0.2 =$	
3	$3 \times 0.02 =$		25	$0.6 \times 0.02 =$	
4	$3 \times 3 =$		26	$0.2 \times 0.06 =$	
5	$3 \times 0.3 =$		27	$5 \times 7 =$	
6	$3 \times 0.03 =$		28	$0.5 \times 7 =$	
7	$2 \times 4 =$		29	$0.5 \times 0.7 =$	
8	$2 \times 0.4 =$		30	$0.5 \times 0.07 =$	
9	$2 \times 0.04 =$		31	$0.7 \times 0.05 =$	
10	$5 \times 3 =$		32	$2 \times 8 =$	
11	$5 \times 0.3 =$		33	$9 \times 0.2 =$	
12	$5 \times 0.03 =$		34	$3 \times 7 =$	
13	$7 \times 2 =$		35	$8 \times 0.03 =$	
14	$7 \times 0.2 =$		36	$4 \times 6 =$	
15	$7 \times 0.02 =$		37	$0.6 \times 7 =$	
16	$4 \times 3 =$		38	$0.7 \times 0.7 =$	
17	$4 \times 0.3 =$		39	$0.8 \times 0.06 =$	
18	$0.4 \times 3 =$		40	$0.09 \times 0.6 =$	
19	$0.4 \times 0.3 =$		41	$6 \times 0.8 =$	
20	$0.4 \times 0.03 =$		42	$0.7 \times 0.9 =$	
21	$0.3 \times 0.04 =$		43	$0.08 \times 0.8 =$	
22	$6 \times 2 =$		44	$0.9 \times 0.08 =$	

B

Improvement _____ # Correct _____

Multiply.

1	$4 \times 2 =$		23	$0.8 \times 2 =$	
2	$4 \times 0.2 =$		24	$0.8 \times 0.2 =$	
3	$4 \times 0.02 =$		25	$0.8 \times 0.02 =$	
4	$2 \times 3 =$		26	$0.2 \times 0.08 =$	
5	$2 \times 0.3 =$		27	$5 \times 9 =$	
6	$2 \times 0.03 =$		28	$0.5 \times 9 =$	
7	$3 \times 3 =$		29	$0.5 \times 0.9 =$	
8	$3 \times 0.3 =$		30	$0.5 \times 0.09 =$	
9	$3 \times 0.03 =$		31	$0.9 \times 0.05 =$	
10	$4 \times 3 =$		32	$2 \times 6 =$	
11	$4 \times 0.3 =$		33	$7 \times 0.2 =$	
12	$4 \times 0.03 =$		34	$3 \times 8 =$	
13	$9 \times 2 =$		35	$9 \times 0.03 =$	
14	$9 \times 0.2 =$		36	$4 \times 8 =$	
15	$9 \times 0.02 =$		37	$0.7 \times 6 =$	
16	$5 \times 3 =$		38	$0.6 \times 0.6 =$	
17	$5 \times 0.3 =$		39	$0.6 \times 0.08 =$	
18	$0.5 \times 3 =$		40	$0.06 \times 0.9 =$	
19	$0.5 \times 0.3 =$		41	$8 \times 0.6 =$	
20	$0.5 \times 0.03 =$		42	$0.9 \times 0.7 =$	
21	$0.3 \times 0.05 =$		43	$0.07 \times 0.7 =$	
22	$8 \times 2 =$		44	$0.8 \times 0.09 =$	

Name _____

Date _____

1. Fill in the blanks to make the equation true.

$$\frac{9}{4} \times 1 = \frac{9}{4} \times \text{---} = \frac{45}{20}$$

2. Express the fractions as equivalent decimals.

a. $\frac{1}{4} =$

b. $\frac{2}{5} =$

c. $\frac{3}{25} =$

d. $\frac{5}{20} =$

Name _____

Date _____

Fill in the blank to make the number sentences true. Explain how you know.

a. $\frac{\quad}{3} \times 11 > 11$

b. $5 \times \frac{\quad}{8} < 5$

c. $6 \times \frac{2}{\quad} = 6$

Name _____

Date _____

1. Fill in the blank using one of the following scaling factors to make each number sentence true.

1.009	1.00	0.898
-------	------	-------

- a. $3.06 \times \underline{\hspace{1cm}} < 3.06$ b. $5.2 \times \underline{\hspace{1cm}} = 5.2$ c. $\underline{\hspace{1cm}} \times 0.89 > 0.89$
2. Will the product of 22.65×0.999 be greater than or less than 22.65? Without calculating, explain how you know.

Name _____

Date _____

1. Draw a tape diagram and a number line to solve. Fill in the blanks that follow.

a. $5 \div \frac{1}{2} =$ _____

There are ____ halves in 1 whole.

There are ____ halves in 5 wholes.

5 is $\frac{1}{2}$ of what number? _____

b. $4 \div \frac{1}{4} =$ _____

There are ____ fourths in 1 whole.

There are ____ fourths in ____ wholes.

4 is $\frac{1}{4}$ of what number? _____

2. Ms. Leverenz is doing an art project with her class. She has a 3 foot piece of ribbon. If she gives each student an eighth of a foot of ribbon, will she have enough for her class of 22 students?

Name _____

Date _____

1. Solve. Support at least one of your answers with a model or tape diagram.

a. $\frac{1}{2} \div 4 =$ _____

b. $\frac{1}{8} \div 5 =$ _____

2. Larry spends half of his workday teaching piano lessons. If he sees 6 students, each for the same amount of time, what fraction of his workday is spent with each student?

Name _____

Date _____

Create a word problem for the following expressions, and then solve.

a. $4 \div \frac{1}{2}$

b. $\frac{1}{2} \div 4$

Name _____

Date _____

1. 8.3 is equal to

_____ tenths

_____ hundredths

2. 28 is equal to

_____ hundredths

_____ tenths

3. $15.09 \div 0.01 =$ _____4. $267.4 \div \frac{1}{10} =$ _____5. $632.98 \div \frac{1}{100} =$ _____

A

Correct _____

Divide.

1	$\frac{1}{2} \div 2 =$		23	$4 \div \frac{1}{4} =$	
2	$\frac{1}{2} \div 3 =$		24	$\frac{1}{3} \div 3 =$	
3	$\frac{1}{2} \div 4 =$		25	$\frac{2}{3} \div 3 =$	
4	$\frac{1}{2} \div 7 =$		26	$\frac{1}{4} \div 2 =$	
5	$7 \div \frac{1}{2} =$		27	$\frac{3}{4} \div 2 =$	
6	$6 \div \frac{1}{2} =$		28	$\frac{1}{5} \div 2 =$	
7	$5 \div \frac{1}{2} =$		29	$\frac{3}{5} \div 2 =$	
8	$3 \div \frac{1}{2} =$		30	$\frac{1}{6} \div 2 =$	
9	$2 \div \frac{1}{5} =$		31	$\frac{5}{6} \div 2 =$	
10	$3 \div \frac{1}{5} =$		32	$\frac{5}{6} \div 3 =$	
11	$4 \div \frac{1}{5} =$		33	$\frac{1}{6} \div 3 =$	
12	$7 \div \frac{1}{5} =$		34	$3 \div \frac{1}{6} =$	
13	$\frac{1}{5} \div 7 =$		35	$6 \div \frac{1}{6} =$	
14	$\frac{1}{3} \div 2 =$		36	$7 \div \frac{1}{7} =$	
15	$2 \div \frac{1}{3} =$		37	$8 \div \frac{1}{8} =$	
16	$\frac{1}{4} \div 2 =$		38	$9 \div \frac{1}{9} =$	
17	$2 \div \frac{1}{4} =$		39	$\frac{1}{8} \div 7 =$	
18	$\frac{1}{5} \div 2 =$		40	$9 \div \frac{1}{8} =$	
19	$2 \div \frac{1}{5} =$		41	$\frac{1}{8} \div 7 =$	
20	$3 \div \frac{1}{4} =$		42	$7 \div \frac{1}{6} =$	
21	$\frac{1}{4} \div 3 =$		43	$9 \div \frac{1}{7} =$	
22	$\frac{1}{4} \div 4 =$		44	$\frac{1}{8} \div 9 =$	

B

Improvement _____

Correct _____

Divide.

1	$\frac{1}{2} \div 2 =$		23	$3 \div \frac{1}{3} =$	
2	$\frac{1}{5} \div 3 =$		24	$\frac{1}{4} \div 4 =$	
3	$\frac{1}{5} \div 4 =$		25	$\frac{3}{4} \div 4 =$	
4	$\frac{1}{5} \div 7 =$		26	$\frac{1}{3} \div 3 =$	
5	$7 \div \frac{1}{5} =$		27	$\frac{2}{3} \div 3 =$	
6	$6 \div \frac{1}{5} =$		28	$\frac{1}{6} \div 2 =$	
7	$5 \div \frac{1}{5} =$		29	$\frac{5}{6} \div 2 =$	
8	$3 \div \frac{1}{5} =$		30	$\frac{1}{5} \div 5 =$	
9	$2 \div \frac{1}{2} =$		31	$\frac{3}{5} \div 5 =$	
10	$3 \div \frac{1}{2} =$		32	$\frac{3}{5} \div 4 =$	
11	$4 \div \frac{1}{2} =$		33	$\frac{1}{5} \div 6 =$	
12	$7 \div \frac{1}{2} =$		34	$6 \div \frac{1}{5} =$	
13	$\frac{1}{2} \div 7 =$		35	$6 \div \frac{1}{4} =$	
14	$\frac{1}{4} \div 2 =$		36	$7 \div \frac{1}{6} =$	
15	$2 \div \frac{1}{4} =$		37	$8 \div \frac{1}{7} =$	
16	$\frac{1}{3} \div 2 =$		38	$9 \div \frac{1}{8} =$	
17	$2 \div \frac{1}{3} =$		39	$\frac{1}{8} \div 8 =$	
18	$\frac{1}{2} \div 2 =$		40	$9 \div \frac{1}{9} =$	
19	$2 \div \frac{1}{2} =$		41	$\frac{1}{9} \div 8 =$	
20	$4 \div \frac{1}{3} =$		42	$7 \div \frac{1}{7} =$	
21	$\frac{1}{3} \div 4 =$		43	$9 \div \frac{1}{6} =$	
22	$\frac{1}{3} \div 3 =$		44	$\frac{1}{8} \div 6 =$	

Name _____

Date _____

Rewrite the division expression as a fraction and divide.

a. $3.2 \div 0.8 =$

b. $3.2 \div 0.08 =$

c. $7.2 \div 0.9 =$

d. $0.72 \div 0.09 =$

Name _____

Date _____

Estimate first, and then solve using the standard algorithm. Show how you rename the divisor as a whole number.

1. $6.39 \div 0.09$

2. $82.14 \div 0.6$

Name _____

Date _____

1. Write an equivalent expression in numerical form.

A fourth as much as the product of two-thirds and 0.8

2. Write an equivalent expression in word form.

a. $\frac{3}{8} \times (1 - \frac{1}{3})$

b. $(1 - \frac{1}{3}) \div 2$

3. Compare the expressions in 2(a) and 2(b). Without evaluating, determine which expression is greater, and explain how you know.

A

Correct _____

Divide.

1	$1 \div 1 =$		23	$5 \div 0.1 =$	
2	$1 \div 0.1 =$		24	$0.5 \div 0.1 =$	
3	$2 \div 0.1 =$		25	$0.05 \div 0.1 =$	
4	$7 \div 0.1 =$		26	$0.08 \div 0.1 =$	
5	$1 \div 0.1 =$		27	$4 \div 0.01 =$	
6	$10 \div 0.1 =$		28	$40 \div 0.01 =$	
7	$20 \div 0.1 =$		29	$47 \div 0.01 =$	
8	$60 \div 0.1 =$		30	$59 \div 0.01 =$	
9	$1 \div 1 =$		31	$3 \div 0.1 =$	
10	$1 \div 0.1 =$		32	$30 \div 0.1 =$	
11	$10 \div 0.1 =$		33	$32 \div 0.1 =$	
12	$100 \div 0.1 =$		34	$32.5 \div 0.1 =$	
13	$200 \div 0.1 =$		35	$25 \div 5 =$	
14	$800 \div 0.1 =$		36	$2.5 \div 0.5 =$	
15	$1 \div 0.1 =$		37	$2.5 \div 0.05 =$	
16	$1 \div 0.01 =$		38	$3.6 \div 0.04 =$	
17	$2 \div 0.01 =$		39	$32 \div 0.08 =$	
18	$9 \div 0.01 =$		40	$56 \div 0.7 =$	
19	$5 \div 0.01 =$		41	$77 \div 1.1 =$	
20	$50 \div 0.01 =$		42	$4.8 \div 0.12 =$	
21	$60 \div 0.01 =$		43	$4.84 \div 0.4 =$	
22	$20 \div 0.01 =$		44	$9.63 \div 0.03 =$	

B

Improvement _____ # Correct _____

Divide.

1	$10 \div 1 =$		23	$4 \div 0.1 =$	
2	$1 \div 0.1 =$		24	$0.4 \div 0.1 =$	
3	$2 \div 0.1 =$		25	$0.04 \div 0.1 =$	
4	$8 \div 0.1 =$		26	$0.07 \div 0.1 =$	
5	$1 \div 0.1 =$		27	$5 \div 0.01 =$	
6	$10 \div 0.1 =$		28	$50 \div 0.01 =$	
7	$20 \div 0.1 =$		29	$53 \div 0.01 =$	
8	$70 \div 0.1 =$		30	$68 \div 0.01 =$	
9	$1 \div 1 =$		31	$2 \div 0.1 =$	
10	$1 \div 0.1 =$		32	$20 \div 0.1 =$	
11	$10 \div 0.1 =$		33	$23 \div 0.1 =$	
12	$100 \div 0.1 =$		34	$23.6 \div 0.1 =$	
13	$200 \div 0.1 =$		35	$15 \div 5 =$	
14	$900 \div 0.1 =$		36	$1.5 \div 0.5 =$	
15	$1 \div 0.1 =$		37	$1.5 \div 0.05 =$	
16	$1 \div 0.01 =$		38	$3.2 \div 0.04 =$	
17	$2 \div 0.01 =$		39	$28 \div 0.07 =$	
18	$7 \div 0.01 =$		40	$42 \div 0.6 =$	
19	$4 \div 0.01 =$		41	$88 \div 1.1 =$	
20	$40 \div 0.01 =$		42	$3.6 \div 0.12 =$	
21	$50 \div 0.01 =$		43	$3.63 \div 0.3 =$	
22	$80 \div 0.01 =$		44	$8.44 \div 0.04 =$	

Name _____

Date _____

1. An entire commercial break is 3.6 minutes.

a. If each commercial takes 0.6 minutes, how many commercials will be played?

b. A different commercial break of the same length plays commercials half as long. How many commercials will play during this break?

Name _____

Date _____

1. Multiply or divide. Draw a model to explain your thinking.

a. $\frac{1}{2} \times 6$

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

c. $\frac{3}{4} \times 12$

d. $\frac{2}{5} \times 30$

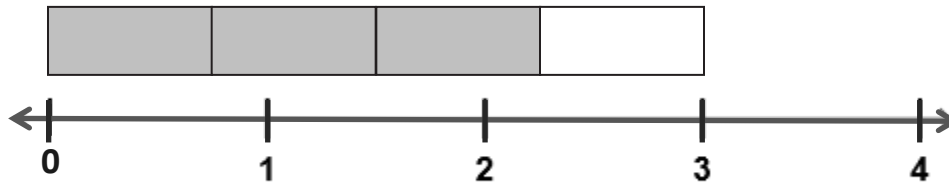
e. $\frac{1}{3}$ of 2 feet = _____ inches

f. $\frac{1}{6}$ of 3 yards = _____ feet

g. $\left(3 + \frac{1}{2}\right) \times 14$

h. $4\frac{2}{3} \times 13$

2. If the whole bar is 3 units long, what is the length of the shaded part of the bar? Write a multiplication equation for the diagram, and then solve.



3. Circle the expression(s) that are equal to $\frac{3}{5} \times 6$. Explain why the others are *not* equal using words, pictures, or numbers.
- a. $3 \times (6 \div 5)$
- b. $3 \div (5 \times 6)$
- c. $(3 \times 6) \div 5$
- d. $3 \times \frac{6}{5}$

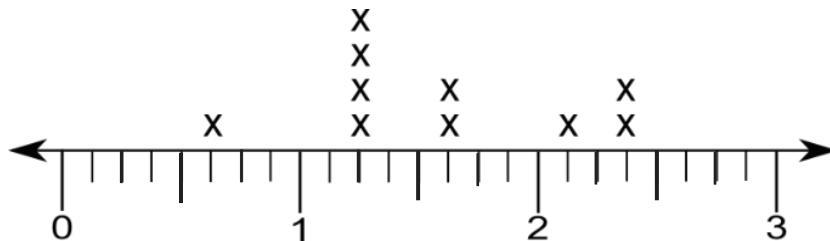
4. Write the following as expressions.

a. One-third the sum of 6 and 3.

b. Four times the quotient of 3 and 4.

c. One-fourth the difference between $\frac{2}{3}$ and $\frac{1}{2}$.

5. Mr. Schaum used 10 buckets to collect rainfall in various locations on his property. The following line plot shows the amount of rain collected in each bucket in gallons. Write an expression that includes multiplication to show how to find the total amount of water collected in gallons. Then, solve your expression.



6. Mrs. Williams uses the following recipe for crispy rice treats. She decides to make $\frac{2}{3}$ of the recipe.

2 cups melted butter
24 oz marshmallows
13 cups rice crispy cereal

- a. How much of each ingredient will she need? Write an expression that includes multiplication. Solve by multiplying.
- b. How many fluid ounces of butter will she use? (Use your measurement conversion chart, if you wish.)
- c. When the crispy rice treats have cooled, Mrs. Williams cuts them into 30 equal pieces. She gives two-fifths of the treats to her son and takes the rest to school. How many treats will Mrs. Williams take to school? Use any method to solve.

Name _____

Date _____

1. Multiply or divide. Draw a model to explain your thinking.

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

b. $\frac{3}{4}$ of $\frac{1}{3}$

c. $2\frac{3}{4} \times \frac{8}{9}$

d. $4 \div \frac{1}{3}$

e. $5 \div \frac{1}{4}$

f. $\frac{1}{4} \div 5$

2. Multiply or divide using any method.

a. 1.5×32

b. 1.5×0.32

c. $12 \div 0.03$

d. $1.2 \div 0.3$

e. $12.8 \times \frac{3}{4}$

f. $102.4 \div 3.2$

3. Fill in the chart by writing an equivalent expression.

a.	One-fifth the sum of one-half and one-third	
b.	Two and one-half times the sum of nine and twelve	
c.	Twenty-four divided by the difference between $1\frac{1}{2}$ and $\frac{3}{4}$	

4. A castle has to be guarded 24 hours a day. Five knights are ordered to split each day's guard duty equally. How long will each knight spend on guard duty in one day?

a. Record your answer in hours.

b. Record your answer in hours and minutes.

c. Record your answer in minutes.

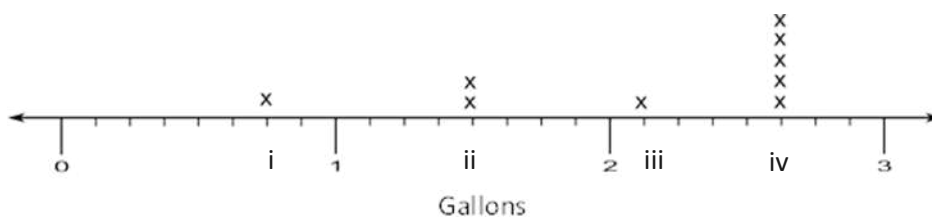
5. On the blank, write a division expression that matches the situation.
- a. _____ Mark and Jada share 5 yards of ribbon equally. How much ribbon will each get?
- b. _____ It takes half of a yard of ribbon to make a bow. How many bows can be made with 5 yards of ribbon?
- c. Draw a diagram for each problem and solve.
- d. Could either of the problems also be solved by using $\frac{1}{2} \times 5$? If so, which one(s)? Explain your thinking.

6. Jackson claims that multiplication always makes a number bigger. He gave the following examples:

- If I take 6, and I multiply it by 4, I get 24, which is bigger than 6.
- If I take $\frac{1}{4}$, and I multiply it by 2 (whole number), I get $\frac{2}{4}$, or $\frac{1}{2}$ which is bigger than $\frac{1}{4}$.

Jackson's reasoning is incorrect. Give an example that proves he is wrong, and explain his mistake using pictures, words, or numbers.

7. Jill collected honey from 9 different beehives, and recorded the amount collected, in gallons, from each hive in the line plot shown:



a. She wants to write the value of each point marked on the number line above (Points i–iv) in terms of the largest possible whole number of gallons, quarts, and pints. Use the line plot above to fill in the blanks with the correct conversions. (The first one is done for you.)

i. 0 gal 3 qt 0 pt

ii. _____ gal _____ qt _____ pt

iii. _____ gal _____ qt _____ pt

iv. _____ gal _____ qt _____ pt

- b. Find the total amount of honey collected from the five hives that produced the most honey.
- c. Jill collected a total of 19 gallons of honey. If she distributes all of the honey equally between 9 jars, how much honey will be in each jar?
- d. Jill used $\frac{3}{4}$ of a jar of honey for baking. How much honey did she use baking?

- e. Jill's mom used $\frac{1}{4}$ of a gallon of honey to bake 3 loaves of bread. If she used an equal amount of honey in each loaf, how much honey did she use for 1 loaf?
- f. Jill's mom stored some of the honey in a container that held $\frac{3}{4}$ of a gallon. She used half of this amount to sweeten tea. How much honey, in cups, was used in the tea? Write an equation and draw a tape diagram.
- g. Jill uses some of her honey to make lotion. If each bottle of lotion requires $\frac{1}{4}$ gallon, and she uses a total of 3 gallons, how many bottles of lotion does she make?