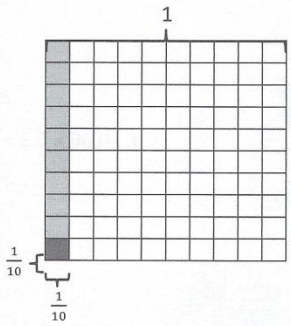
Name _____ Date _____

1. Multiply and model. Rewrite each expression as a multiplication sentence with decimal factors. The first one is done for you.

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

$= \frac{1 \times 1}{10 \times 10}$

$= \frac{1}{100}$

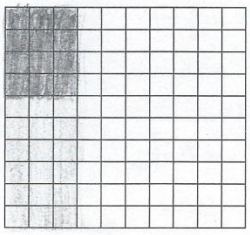


$0.1 \times 0.1 = 0.01$

b. $\frac{4}{10} \times \frac{3}{10}$

$\frac{4 \times 3}{10 \times 10} = \frac{12}{100}$

12/100 = 0.12



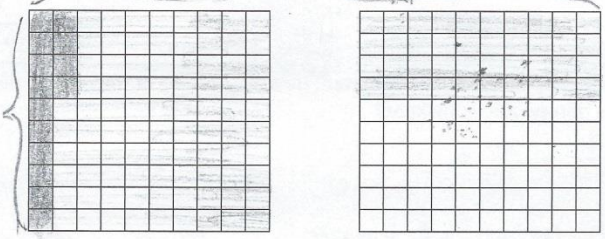
c. $\frac{1}{10} \times 1.4$

$\frac{1}{10} \times \frac{14}{10} =$

$\frac{1 \times 14}{10 \times 10} = \frac{14}{100}$

$= 0.14$

1 4/10 or 1.4



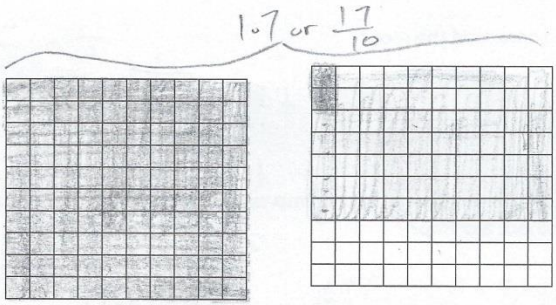
d. $\frac{6}{10} \times 1.7$

$\frac{6}{10} \times \frac{17}{10} =$

$\frac{6 \times 17}{10 \times 10} = \frac{102}{100}$

$1\frac{2}{100} = 1.02$

1.7 or 17/10



2. Multiply. The first few are started for you.

a. $5 \times 0.7 =$ _____

$= 5 \times \frac{7}{10}$

$= \frac{5 \times 7}{10}$

$= \frac{35}{10}$

$= 3.5$

b. $0.5 \times 0.7 =$ _____

$= \frac{5}{10} \times \frac{7}{10}$

$= \frac{5 \times 7}{10 \times 10}$

$= \frac{35}{100}$

$= 0.35$

c. $0.05 \times 0.7 =$ _____

$= \frac{5}{100} \times \frac{7}{10}$

$= \frac{5 \times 7}{100 \times 10}$

$= \frac{35}{1000}$

$= 0.035$

d. $6 \times 0.3 =$ _____

$6 \times \frac{3}{10}$

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

$\frac{18}{10} = 1\frac{8}{10} = 1.8$

e. $0.6 \times 0.3 =$ _____

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

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

$\frac{18}{100} = 0.18$

f. $0.06 \times 0.3 =$ _____

$\frac{6}{100} \times \frac{3}{10} =$

$\frac{6 \times 3}{100 \times 10} =$

$\frac{18}{100} = 0.018$

g. $1.2 \times 4 =$ _____

$1\frac{2}{10} \times 4 =$

$\frac{12}{10} \times 4 =$

$\frac{12 \times 4}{10} = \frac{48}{10} = 4\frac{8}{10} = 4.8$

h. $1.2 \times 0.4 =$ _____

$1\frac{2}{10} \times \frac{4}{10} =$

$\frac{12}{10} \times \frac{4}{10} = \frac{12 \times 4}{10 \times 10}$

$\frac{48}{100} = 0.48$

i. $0.12 \times 0.4 =$ _____

$\frac{12}{100} \times \frac{4}{10} =$

$\frac{12 \times 4}{100 \times 10} = \frac{48}{1000} =$

0.048

3. A boy scout has a length of rope measuring 0.7 meter. He uses 2 tenths of the rope to tie a knot at one end. How many meters of rope are in the knot?

$0.7 \times 0.2 = \frac{7}{10} \times \frac{2}{10} = \frac{7 \times 2}{10 \times 10} = \frac{14}{100} = 0.14$

There are 0.14 m of rope.

4. After just 4 tenths of a 2.5 mile race was completed, Lenox took the lead and remained there until the end of the race.

a. How many miles did Lenox lead the race?

$\frac{10}{10} - \frac{4}{10} = \frac{6}{10}$

$\frac{6}{10} \times 2.5 = \frac{6}{10} \times \frac{25}{10} = \frac{150}{100} = 1\frac{5}{10} = 1.5$

Lenox lead the race for 1.5 miles

b. Reid, the second place finisher, developed a cramp with 3 tenths of the race remaining. How many miles did Reid run without a cramp?

$\frac{10}{10} - \frac{3}{10} = \frac{7}{10}$

$\frac{7}{10} \times 2.5 = \frac{7}{10} \times \frac{25}{10} = \frac{7 \times 25}{10 \times 10} = \frac{175}{100} = 1\frac{75}{100} = 1.75$

Reid ran 1.75 miles without a cramp

Name _____ Date _____

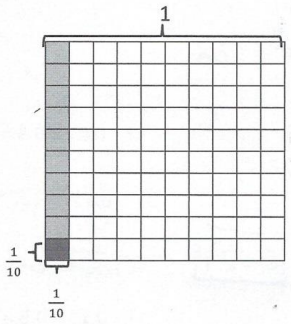
1. Multiply and model. Rewrite each expression as a number sentence with decimal factors. The first one is done for you.

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

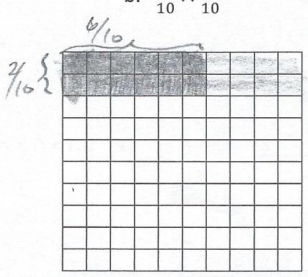
$= \frac{1 \times 1}{10 \times 10}$

$= \frac{1}{100}$

$0.1 \times 0.1 = 0.01$



b. $\frac{6}{10} \times \frac{2}{10}$



$\frac{6 \times 2}{10 \times 10} =$

$\frac{12}{100} =$

$0.6 \times 0.2 =$

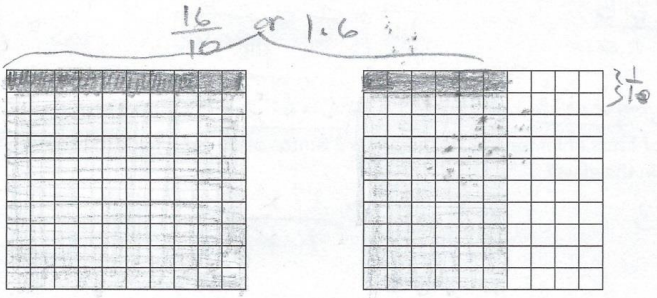
$.12$

c. $\frac{1}{10} \times 1.6$

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

$\frac{1}{10} \times \frac{16}{10} = \frac{16}{100}$

$0.1 \times 1.6 = .16$



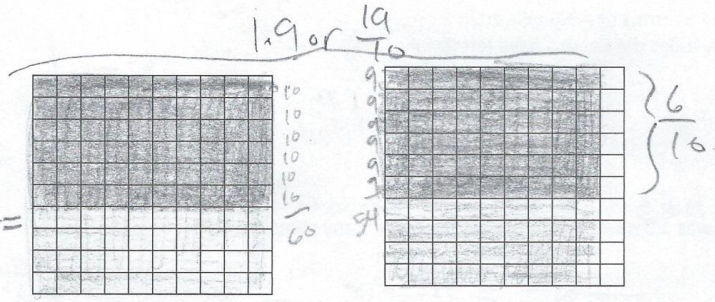
d. $\frac{6}{10} \times 1.9$

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

$\frac{6}{10} \times \frac{19}{10} = \frac{6 \times 19}{10 \times 10} =$

$\frac{114}{100} = 1\frac{14}{100}$

$0.6 \times 1.9 = 1.14$



2. Multiply. The first few are started for you.

a. $4 \times 0.6 =$ _____

$= 4 \times \frac{6}{10}$

$= \frac{4 \times 6}{10}$

$= \frac{24}{10}$

$= 2.4$

b. $0.4 \times 0.6 =$ _____

$= \frac{4}{10} \times \frac{6}{10}$

$= \frac{4 \times 6}{10 \times 10}$

$= \frac{24}{100} = 0.24$

c. $0.04 \times 0.6 =$ _____

$= \frac{4}{100} \times \frac{6}{10}$

$= \frac{4 \times 6}{100 \times 10}$

$= \frac{24}{1000} = 0.024$

d. $7 \times 0.3 =$ _____

$7 \times \frac{3}{10} =$

$\frac{7 \times 3}{10} = \frac{21}{10} = 2.1$

e. $0.7 \times 0.3 =$ _____

$\frac{7}{10} \times \frac{3}{10} =$

$\frac{7 \times 3}{10 \times 10} = \frac{21}{100} = 0.21$

f. $0.07 \times 0.3 =$ _____

$\frac{7}{100} \times \frac{3}{10} =$

$\frac{7 \times 3}{100 \times 10} = \frac{21}{1000} = 0.021$

g. $1.3 \times 5 =$ _____

$\frac{13}{10} \times 5 = \frac{65}{10}$

$\frac{65}{10} = 6\frac{5}{10} = 6.5$

h. $1.3 \times 0.5 =$ _____

$\frac{13}{10} \times \frac{5}{10} = \frac{13 \times 5}{10 \times 10} =$

$\frac{65}{100} = 0.65$

i. $0.13 \times 0.5 =$ _____

$\frac{13}{100} \times \frac{5}{10} = \frac{13 \times 5}{100 \times 10} =$

$\frac{65}{1000} = 0.065$

3. Jennifer makes 1.7 liters of lemonade. If she pours 3 tenths of the lemonade in the glass, how many liters of lemonade are in the glass?

$1.7 \times 0.3 = 1\frac{7}{10} \times \frac{3}{10} = \frac{17 \times 3}{10 \times 10} = \frac{51}{100} = 0.51$

Jennifer has 0.51 liters in the glass

4. Cassius walked 6 tenths of a 3.6 mile trail.

a. How many miles did Cassius have left to hike?

$\frac{10}{10} - \frac{6}{10} = \frac{4}{10}$

$\frac{4}{10} \times 3.6 = \frac{4}{10} \times \frac{36}{10} = \frac{144}{100} = 1\frac{44}{100}$

Cassius has 1.44 miles to walk

b. Cameron was 1.3 miles ahead of Cassius. How many miles did Cameron hike already?

$3.6 \times \frac{6}{10} = \frac{36}{10} \times \frac{6}{10} = \frac{36 \times 6}{10 \times 10} = \frac{216}{100} = 2.16$

$2.16 + 1.3 = 3.46$

Cameron hiked 3.46 miles

Name _____ Date _____

1. Multiply using both fraction form and unit form. Check your answer by counting the decimal places. The first one is done for you.

a. $2.3 \times 1.8 = \frac{23}{10} \times \frac{18}{10}$

$= \frac{23 \times 18}{100}$

$= \frac{414}{100}$

$= 4.14$

2 3 tenths
× 1 8 tenths
1 8 4
+ 2 3 0
4 1 4 hundredths

b. $2.3 \times 0.9 =$

$\frac{23}{10} \times \frac{9}{10} =$

$\frac{207}{100} = 2.07$

2 3 tenths
× 9 tenths
207 hundredths

c. $6.6 \times 2.8 =$

$\frac{66}{10} \times \frac{28}{10} =$

$\frac{1848}{100}$

66 tenths
28 tenths
528
132
1848 hundredths

d. $3.3 \times 1.4 = \frac{33}{10} \times \frac{14}{10} =$

33 tenths
14 tenths
132
33
462
hundredths

2. Multiply using fraction form and unit form. Check your answer by counting the decimal places. The first one is done for you.

a. $2.38 \times 1.8 = \frac{238}{100} \times \frac{18}{10}$

$= \frac{238 \times 18}{1{,}000}$

$= \frac{4{,}284}{1{,}000}$

$= 4.284$

2 3 8 hundredths
× 1 8 tenths
1 9 0 4
+ 2 3 8 0
4, 2 8 4 thousandths

b. $2.37 \times 0.9 =$

$\frac{237}{100} \times \frac{9}{10} =$

$\frac{2133}{1000}$

2.133

2 3 7 hundredths
× 9 tenths
2133 thousandths

c. $6.06 \times 2.8 =$

$\frac{606}{100} \times \frac{28}{10} =$

$\frac{16968}{1000}$

16.968

606 hundredths
28 tenths
4848
1212
16968 thousandths

d. $3.3 \times 0.14 =$

$\frac{33}{10} \times \frac{14}{100}$

$\frac{462}{1000}$

0.462

33 tenths
14 hundredths
132
33
462
Thousandths

2. Solve using the standard algorithm. Show your thinking about the units of your product. The first one is done for you.

a. $3.2 \times 0.6 = 1.92$

3 2 tenths
× 6 tenths
1 9 2 hundredths

$\frac{32}{10} \times \frac{6}{10} = \frac{32 \times 6}{100}$

b. $3.2 \times 1.2 =$ _____

$\frac{32}{10} \times \frac{12}{10} =$

3 2 tenths
× 1 2 tenths
64
32
3 8 4 hundredths

$\frac{384}{1000}$

c. $8.31 \times 2.4 =$ _____

831 h
× 24 t
3324
1662
19944

$\frac{831}{100} \times \frac{24}{10} =$

$\frac{19944}{1000}$

d. $7.50 \times 3.5 =$ _____

750 h
× 35 t
3750
2250
26250 th

$\frac{750}{100} \times \frac{35}{10} =$

$\frac{26250}{1000} =$

26.250

3. Carolyn buys 1.2 pounds of chicken breast. If each pound of chicken breast costs $3.70, how much will she pay for the chicken breast?

1.2 lb
$3.70 per lb

3.70
1.2
740
370
4.440

Carolyn will pay $4.44

4. A kitchen measures 3.75 meters by 4.2 meters.

a. Find the area of the kitchen.

3.75 m
4.2 m

3.75 × 4.2

3 2
1 1
3.75
4.2
750
1500
15.750

The area is $15.75 m^2$

b. The area of the living room is one and a half times that of the kitchen. Find the total area of the living room and the kitchen.

K $15.75 m^2$
LR $1.5 \times 15.75 m^2$

2 3 2
15.75
× 1.5
7875
1575
24.625

1 1
24.625
+ 15.75
40.375

The total area is $40.375 m^2$

Name _____ Date _____

1. Multiply using fraction form and unit form. Check your answer by counting the decimal places. The first one is done for you.

a. $3.3 \times 1.6 = \frac{33}{10} \times \frac{16}{10}$

$= \frac{33 \times 16}{100}$

$= \frac{528}{100}$

$= 5.28$

3 3 tenths
× 1 6 tenths
1 9 8
+ 3 3 0
5 2 8 hundredths

b. $3.3 \times 0.8 =$

$\frac{33}{10} \times \frac{8}{10} =$

$\frac{264}{100}$

3 3 tenths
× 8 tenths
264 hundredths

c. $4.4 \times 3.2 =$

$\frac{44}{10} \times \frac{32}{10} = \frac{1408}{100} = 14.08$

44 t
32 t
88
132
1408 h

d. $2.2 \times 1.6 =$

$\frac{22}{10} \times \frac{16}{10} = \frac{352}{100} = 3.52$

22 t
16 t
132
22
352 h

3. Multiply. The first one is partially done for you.

a. $3.36 \times 1.4 = \frac{336}{100} \times \frac{14}{10}$

$= \frac{336 \times 14}{1{,}000}$

$= \frac{4{,}704}{1{,}000}$

$= 4.704$

3 3 6 hundredths
× 1 4 tenths
1344
336
4704 th

b. $3.35 \times 0.7 =$

$\frac{335}{100} \times \frac{7}{10} = \frac{2345}{1000} = 2.345$

3 3 5 hundredths
× 7 tenths
2345 th

c. $4.04 \times 3.2 =$

$\frac{404}{100} \times \frac{32}{10} = \frac{12928}{1000} = 12.928$

404 h
32 t
808
1212
12928 th

d. $4.4 \times 0.16 =$

$\frac{44}{10} \times \frac{16}{100} = \frac{704}{1000}$

16 h
× 44 t
64
64
704 th

4. Solve using the standard algorithm. Show your thinking about the units of your product. The first one is done for you.

a. $3.2 \times 0.6 = 1.92$

3 2 tenths
× 6 tenths
1 9 2 hundredths

$\frac{32}{10} \times \frac{6}{10} = \frac{32 \times 6}{100}$

b. $2.3 \times 2.1 = \frac{23 \times 21}{10 \times 10} = \frac{483}{100}$

2 3 tenths
× 2 1 tenths

23
46
483 h

c. $7.41 \times 3.4 = \frac{741 \times 34}{100 \times 10} = \frac{25194}{1000}$

741 h
34 t
2964
2223
25194 th

d. $6.50 \times 4.5 = \frac{650 \times 45}{100 \times 10} = \frac{29250}{1000}$

650 h
45 t
3250
2600
29250 th

5. Erik buys 2.5 pounds of cashews. If each pound of cashews costs $7.70, how much will he pay for the cashews?

2.5 lb
$7.70 per lb

7.70
2.5
3850
1540
19250

He will pay $19.25

6. A swimming pool at a park measures 9.75 meters by 7.2 meters.

a. Find the area of the swimming pool.

9.75
× 7.2
1950
6825
70.200

The area is 70.2 m^2

b. The area of the playground is one and a half times that of the swimming pool. Find the total area of the swimming pool and the playground.

SP is 70.2 m^2
P is 70.2 m^2 × 1.5

70.2
× 1.5
3510
702
105.30

105.30
+ 70.2
175.50

The Total area is 175.50 m^2

Name _____ Date _____

1. Convert. Express your answer as a mixed number, if possible. The first one is done for you.

a. 2 ft = $\frac{2}{3}$ yd

2 ft = 2 × 1 ft

= 2 × $\frac{1}{3}$ yd

= $\frac{2}{3}$ yd

b. 4 ft = $1\frac{1}{3}$ yd

4 ft = 4 × 1 ft

= 4 × $\frac{1}{3}$ yd

= $\frac{4}{3}$ yd

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

c. 7 in = _____ ft

7 in = 7 × 1 ft

= 7 × $\frac{1}{12}$ ft

= $\frac{7}{12}$ ft

d. 13 in = _____ ft

13 in = 13 × 1 ft

= 13 × $\frac{1}{12}$ = $\frac{13}{12}$

= $1\frac{1}{12}$ ft

e. 5 oz = _____ lb

5 oz = 5 × 1 lb

= 5 × $\frac{1}{16}$ lb

= $\frac{5}{16}$

f. 18 oz = _____ lb

18 oz = 18 × 1 lb

= 18 × $\frac{1}{16}$ lb

= $\frac{18}{16}$

= $1\frac{2}{16}$ = $1\frac{1}{8}$

2. Regina buys 24 inches of trim for a craft project.
   a. What fraction of a yard does Regina buy?

1y = 36 in

$24 \times \frac{1}{36} = \frac{24}{36} = \boxed{\frac{2}{3}}$

It is 2/3 y

   b. If a whole yard of trim costs $6, how much did Regina pay?

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

Regina paid $4

3. At Yo-Yo Yogurt, the scale says that Sara has 8 ounces of vanilla yogurt in her cup. Her father's yogurt weighs 11 ounces. How many pounds of frozen yogurt did they buy altogether? Express your answer as a mixed number.

S 8oz
F 11oz

$\begin{array}{r} 11 \\ +\ 8 \\ \hline 19 \end{array}$

$19 \times \frac{1}{16} = \frac{19}{16} = \boxed{1\frac{3}{16}}$

They bought 1 3/16 lb

4. Pheng-Xu drinks 1 cup of milk every day for lunch. How many gallons of milk does he drink in 2 weeks?

1c x 14 = 14c

1g = 16c

$14 \times \frac{1}{16} = \frac{14}{16} = \boxed{\frac{7}{8}}$

Pheng-Xu drinks 7/8 gallons

Name _____ Date _____

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

a. 2 ft = $\frac{2}{3}$ yd 2 ft = 2 × 1 ft = 2 × $\frac{1}{3}$ yd = $\frac{2}{3}$ yd	b. 6 ft = 2/3 yd 6 ft = 6 × 1 ft = 6 × 1/3 yd = 2 yd 6/3
c. 5 in = _____ ft 5 in = 5 × 1 ft = 5 × $\frac{1}{12}$ = $\frac{5}{12}$	d. 14 in = _____ ft 14 in = 14 × 1 ft = 14 × $\frac{1}{12}$ = $\frac{14}{12}$ = $1\frac{2}{12}$ = $1\frac{1}{6}$
e. 7 oz = _____ lb 7 oz = 7 × 1 lb 7 × $\frac{1}{16}$ = $\frac{7}{16}$	f. 20 oz = _____ lb 20 oz = 20 × 1 lb = 20 × $\frac{1}{16}$ = $\frac{20}{16}$ = $1\frac{4}{16}$ = $1\frac{1}{4}$
g. 1 pt = _____ qt 1 pt = 1 × 1 qt 1 × $\frac{1}{2}$ = $\frac{1}{2}$	h. 4 pt = _____ qt 4 pt = 1 × 1 qt = 4 × $\frac{1}{2}$ = 4/2 = 2

2. Marty buys 12 ounces of granola.
   a. What fraction of a pound of granola did Marty buy?

$12 \times \frac{1}{16} = \frac{12}{16} = \frac{3}{4}$

She buys 3/4 lb

   b. If a whole pound of granola costs $4, how much did Marty pay?

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

Marty paid $3

3. Sara and her dad visit Yo-Yo Yogurt again. This time, the scale says that Sara has 14 ounces of vanilla yogurt in her cup. Her father's yogurt weighs half as much. How many pounds of frozen yogurt did they buy altogether on this visit? Express your answer as a mixed number.

S 14 oz
F $\frac{1}{2} \times 14$ oz = 7 oz

14 + 7 = 21

$21 \times \frac{1}{16} = \frac{21}{16} = 1\frac{5}{16}$

They bought $1\frac{5}{16}$

4. An art teacher uses 1 quart of blue paint each month. In one year, how many gallons of paint will she use?

$1 qt \times 12 = 12 qt$

$12 \times \frac{1}{4} = \frac{12}{4} = 3$

The art teacher will use 3 gallons

Name _____ Date _____

1. Convert. Show your work. Express your answer as a mixed number. (Draw a tape diagram if it helps you.) The first one is done for you.

a. $2\frac{2}{3}$ yd = 8 ft

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

$= 2\frac{2}{3} \times 3$ ft

$= \frac{8}{3} \times 3$ ft

$= \frac{24}{3}$ ft

$= 8$ ft

b. $1\frac{1}{2}$ qt = _____ gal

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

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

$= \frac{3}{2} \times \frac{1}{4}$ gal

$= 3/8$

c. $4\frac{2}{3}$ ft = _____ in

$4\frac{2}{3}$ ft $= 4\frac{2}{3} \times 12$

$= 14/3 \times 12$

$= 54$

d. $9\frac{1}{2}$ pt = _____ qt

$9\frac{1}{2}$ pt $= 9\frac{1}{2} \times \frac{1}{2}$

$= \frac{19}{2} \times \frac{1}{2} = \frac{19}{4}$

$= 4\frac{3}{4}$

e. $3\frac{3}{5}$ hr = _____ min

$3\frac{3}{5}$ hr $= 3\frac{3}{5} \times 60$

$= \frac{18}{5} \times 60$

$= 216$

18
12
36
18
216

f. $3\frac{2}{3}$ ft = _____ yd

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

$= \frac{11}{3} \times \frac{1}{3} = \frac{11}{9}$

$= 1\frac{2}{9}$

US 1 ton = 2,000 lb

2. Three dump trucks are carrying topsoil to a construction site. Truck A carries 3,545 lb, Truck B carries 1,758 lb, and Truck C carries 3,697 lb. How many tons of topsoil are the 3 trucks carrying altogether?

A 3,545 lb
B 1,758 lb
C 3,697 lb

$^{2}\,^{22}$
3,545
1,758
3,697
9,000

$\frac{9,000}{2,000} = 4\frac{1}{2}$

The three trucks carry 4.5 tons

3. Melissa buys $3\frac{3}{4}$ gallons of iced tea. Denita buys 7 quarts more than Melissa. How much tea do they buy altogether? Express your answer in quarts.

Melissa $3\frac{3}{4}$
Denita $3\frac{3}{4} + 1\frac{3}{4} =$
$4 + \frac{6}{4} = 5\frac{2}{4} = \boxed{5\frac{1}{2}}$

$5\frac{1}{2} + 3\frac{3}{4} =$
$8\frac{1}{2} + \frac{3}{4} =$
$8\frac{2}{4} + \frac{3}{4} =$
$\boxed{9\frac{1}{4} \text{ gallons}}$

They bought 37 qts

$9\frac{1}{4} \times 4 = 36 + \frac{4}{4} = \boxed{37}$

4. Marvin buys a hose that is $27\frac{3}{4}$ feet long. He already owns a hose at home that is $\frac{2}{3}$ the length of the new hose. How many total yards of hose does Marvin have now?

New $27\frac{3}{4}$ ft

Old $27\frac{3}{4} \times \frac{2}{3} = \frac{111}{4} \times \frac{2}{3} = \frac{111}{6} = \boxed{18\frac{1}{2}}$

$18\frac{3}{6} = 18\frac{1}{2}$
$6\overline{)111}$
$\frac{6}{51}$
$\frac{48}{3}$

$27\frac{3}{4} + 18\frac{1}{2} = 45\frac{3}{4} + \frac{1}{2} =$
$45\frac{3}{4} + \frac{2}{4} = 46\frac{1}{4}$

He has $46\frac{1}{4}$

Name _____ Date _____

1. Convert. Show your work. Express your answer as a mixed number. The first one is done for you.

a. $2\frac{2}{3}$ yd = 8 ft

$2\frac{2}{3}$ yd $= 2\frac{2}{3} \times 1$ yd
$= 2\frac{2}{3} \times 3$ ft
$= \frac{8}{3} \times 3$ ft
$= \frac{24}{3}$ ft
$= 8$ ft

b. $1\frac{1}{4}$ ft = _____ yd

$1\frac{1}{4}$ ft $= 1\frac{1}{4} \times 1$ ft
$= 1\frac{1}{4} \times \frac{1}{3}$ yd
$= \frac{5}{4} \times \frac{1}{3}$ yd
=

c. $3\frac{5}{6}$ ft = _____ in

$3\frac{5}{6} \times 12 =$
$36\ \frac{15}{6} = 36 + 2\frac{3}{6}$
$= 38\frac{3}{6} = 38\frac{1}{2}$

d. $7\frac{1}{2}$ pt = _____ qt

$7\frac{1}{2} \times \frac{1}{2} =$
$\frac{15}{2} \times \frac{1}{2} = \frac{15}{4} = 3\frac{3}{4}$

e. $4\frac{3}{10}$ hr = _____ min

$4\frac{3}{10} \times 60 = 240\ \frac{12}{10}$
$= 240 + 1\frac{2}{10} = 241\frac{2}{10}$
$= 241\frac{1}{5}$

f. 33 months = _____ years

$33 \times \frac{1}{12}$
$= \frac{33}{12} = 2\frac{9}{12}$
$= 2\frac{3}{4}$

2. Four members of a track team run a relay race in 165 seconds. How many minutes did it take them to run the race?

$\frac{165}{60} =$

$60 \overline{)165}$ → 2.75

120

450

420

300

300

0

It took 2.75 min

3. Horace buys $2\frac{3}{4}$ pounds of blueberries for a pie. He needs 48 ounces of blueberries for the pie. How many more pounds of blueberries does he need to buy?

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

48 oz

$2\frac{3}{4} \times 16 = 32 + \frac{48}{4} =$

$32 + 12 = 44$

$48 - 44 = 4$

Horace needs to buy 4 lb more.

4. Tiffany is sending a package that may not exceed 16 pounds. The package contains books that weigh a total of $9\frac{3}{8}$ pounds. The other items to be sent weigh $\frac{3}{5}$ the weight of the books. Will Tiffany be able to send the package?

books $9\frac{3}{8}$

other $\frac{3}{5} \times 9\frac{3}{8} = \frac{3}{5} \times \frac{75}{8} = \frac{3 \times \overset{15}{\cancel{75}}}{\cancel{5} \times 8} = \frac{45}{8} = 5\frac{5}{8}$

$9\frac{3}{8} + 5\frac{5}{8} = 14 + \frac{8}{8} = 15$

Tiffany will be able. The total weigh is 15 lb

Name _____ Date _____

1. Fill in the blanks. The first one has been done for you.

a. $\frac{1}{4} \times 1 = \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$

b. $\frac{3}{4} \times 1 = \frac{3}{4} \times \frac{7}{7} = \frac{21}{28}$

c. $\frac{7}{4} \times 1 = \frac{7}{4} \times \frac{5}{5} = \frac{35}{20}$

d. Use words to compare the size of the product to the size of the first factor.

Both the first factor and the product are equivalent fractions.

2. Express each fraction as an equivalent decimal.

a. $\frac{1}{4} \times \frac{25}{25} = \frac{25}{100}$

b. $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100}$

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

d. $\frac{4}{5} \times \frac{2}{2} = \frac{8}{10}$

e. $\frac{1}{20} \times \frac{5}{5} = \frac{5}{100}$

f. $\frac{27}{20} \times \frac{5}{5} = \frac{135}{100}$

g. $\frac{7}{4} \times \frac{25}{25} = \frac{175}{100}$

h. $\frac{8}{5} \times \frac{2}{2} = \frac{16}{10}$

i. $\frac{24}{25} \times \frac{4}{4} = \frac{96}{100}$

j. $\frac{93}{50} \times \frac{2}{2} = \frac{186}{100}$

k. $2\frac{6}{25} \times \frac{4}{4} = 2\frac{24}{100}$

l. $3\frac{31}{50} \times \frac{2}{2} = 3\frac{62}{100}$

3. Jack said that if you take a number and multiply it by a fraction, the product will always be smaller than what you started with. Is he correct? Why or why not? Explain your answer, and give at least two examples to support your thinking.

Jack is correct. The product will always be smaller.

$1/2 \times 3 = 1 1/2$; $4 \times 2/3 = 8/3 = 2 2/3$; $4/5 \times 2 = 8/5 = 1 3/5$

Note: Multiplying by improper fractions or mixed fractions will act a larger number.

4. There is an infinite number of ways to represent 1 on the number line. In the space below, write at least four expressions multiplying by 1. Represent *one* differently in each expression.

$4 \times \frac{3}{2}$ $5 \times \frac{3}{3}$ $6 \times \frac{4}{4}$ $7 \times \frac{5}{5}$

5. Maria multiplied by 1 to rename $\frac{1}{4}$ as hundredths. She made factor pairs equal to 10. Use her method to change one-eighth to an equivalent decimal.

Maria's way: $\frac{1}{4} = \frac{1}{2 \times 2} \times \frac{5 \times 5}{5 \times 5} = \frac{5 \times 5}{(2 \times 5) \times (2 \times 5)} = \frac{25}{100} = 0.25$

$\frac{1}{8} = \frac{1}{2 \times 2 \times 2} \times \frac{5 \times 5 \times 5}{5 \times 5 \times 5} = \frac{5 \times 5 \times 5}{(2 \times 5)(2 \times 5)(2 \times 5} = \frac{125}{1000}$

Paulo renamed $\frac{1}{8}$ as a decimal, too. He knows the decimal equal to $\frac{1}{4}$, and he knows that $\frac{1}{8}$ is half as much as $\frac{1}{4}$. Can you use his ideas to show another way to find the decimal equal to $\frac{1}{8}$?

$\frac{1}{8} = \frac{125}{1000} = 0.125$

$\frac{1}{4}$ is 0.25, so $\frac{1}{2} \times \frac{1}{4}$ is the same as $0.25 \div 2$

$2 \overline{)0.25}$ → 0.125, 2, 05, 4, 10

Name _____ Date _____

1. Fill in the blanks.

a. $\frac{1}{3} \times 1 = \frac{1}{3} \times \frac{3}{3} = \frac{3}{9}$

b. $\frac{2}{3} \times 1 = \frac{2}{3} \times \frac{7}{7} = \frac{14}{21}$

c. $\frac{5}{2} \times 1 = \frac{5}{2} \times \frac{5}{5} = \frac{25}{10}$

d. Compare the first factor to the value of the product.

They are equivalent fractions

2. Express each fraction as an equivalent decimal. The first one is partially done for you.

a. $\frac{3}{4} \times \frac{25}{25} = \frac{3 \times 25}{4 \times 25} = \frac{75}{100} =$

b. $\frac{1}{4} \times \frac{25}{25} = \frac{25}{106}$

c. $\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$

d. $\frac{3}{5} \times \frac{2}{2} = \frac{6}{10}$

e. $\frac{3}{20} \times \frac{5}{5} = \frac{15}{100}$

f. $\frac{25}{20} \times \frac{5}{5} = \frac{125}{100}$

g. $\frac{23}{25} \times \frac{4}{4} = \frac{92}{100}$

h. $\frac{89}{50} \times \frac{2}{2} = \frac{188}{100}$

i. $3\frac{11}{25} \times \frac{4}{4} = 3\frac{44}{100}$

j. $5\frac{41}{50} \times \frac{2}{2} = 5\frac{82}{100}$

3. $\frac{6}{8}$ is equivalent to $\frac{3}{4}$. How can you use this to help you write $\frac{6}{8}$ as a decimal? Show your thinking to solve.

$\frac{3}{4}$ is 0.75, so $\frac{6}{8}$ is the same.

4. A number multiplied by a fraction is not always smaller than the original number. Explain this and give at least two examples to support your thinking.

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

$4 \times 1\frac{1}{5} = 4 + \frac{4}{5} = 4\frac{4}{5}$

5. Elise has $\frac{3}{4}$ of a dollar. She buys a stamp that costs 44 cents. Change both numbers into decimals, and tell how much money Elise has after paying for the stamp.

$\frac{3}{4} = 0.75$

0.44

$$\begin{array}{r} 0.75 \\ -0.44 \\ \hline 0.31 \end{array}$$

She has $0.31

Name _____ Date _____

1. Solve for the unknown. Rewrite each phrase as a multiplication sentence. Circle the scaling factor and put a box around the number of meters.

   a. $\frac{1}{2}$ as long as 8 meters = 4 meters

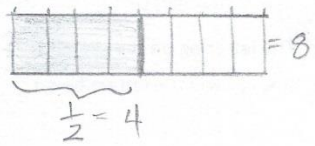
   $\frac{1}{2} \times 8 = 4$

   b. 8 times as long as $\frac{1}{2}$ meter = 4 meters

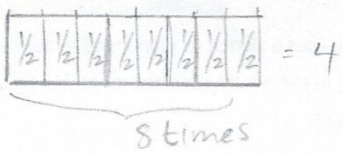
   $8 \times \frac{1}{2}$

2. Draw a tape diagram to model each situation in Problem 1, and describe what happened to the number of meters when it was multiplied by the scaling factor.

   a.

   b.

3. Fill in the blank with a numerator or denominator to make the number sentence true.

   a. $7 \times \frac{1}{4} < 7$ b. $\frac{7}{6} \times 15 > 15$ c. $3 \times \frac{5}{5} = 3$

4. Look at the inequalities in each box. Choose a single fraction to write in all three blanks that would make all three number sentences true. Explain how you know.

   a.

$\frac{3}{4} \times \frac{4}{3} > \frac{3}{4}$	$2 \times \frac{4}{3} > 2$	$\frac{7}{5} \times \frac{4}{3} > \frac{7}{5}$

   Since the factors and the product are the same, the other factor determines the relationship: So, a larger fraction gives a larger product, and a smaller factor gives a smaller product.

   b.

$\frac{3}{4} \times \frac{1}{3} < \frac{3}{4}$	$2 \times \frac{1}{3} < 2$	$\frac{7}{5} \times \frac{1}{3} < \frac{7}{5}$

5. Johnny says multiplication always makes numbers bigger. Explain to Johnny why this isn't true. Give more than one example to help him understand.

When multiplying by proper fractions, the product is smaller.

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

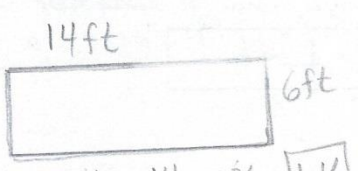
$5 \times \frac{1}{4} = \frac{5}{4} = 1\frac{1}{4}$

6. A company uses a sketch to plan an advertisement on the side of a building. The lettering on the sketch is $\frac{3}{4}$ inch tall. In the actual advertisement, the letters must be 34 times as tall. How tall will the letters be on the building?

$\frac{3}{4} \times 34 = \frac{102}{4} = 25\frac{2}{4} = 25\frac{1}{2}$

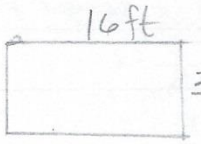
The size should be $25\frac{1}{2}$ inches tall.

7. Jason is drawing the floor plan of his bedroom. He is drawing everything with dimensions that are $\frac{1}{12}$ of the actual size. His bed measures 6 ft by 3 ft, and the room measures 14 ft by 16 ft. What are the dimensions of his bed and room in his drawing?



$14 \times \frac{1}{12} = \frac{14}{12} = 1\frac{2}{12} = 1\frac{1}{6}$

$6 \times \frac{1}{12} = \frac{6}{12} = \frac{1}{2}$



$16 \times \frac{1}{12} = \frac{16}{12} = 1\frac{4}{12} = 1\frac{1}{3}$

$3 \times \frac{1}{12} = \frac{3}{12} = \frac{1}{4}$

The dimensions are $1\frac{1}{6}$ by $\frac{1}{2}$, and $1\frac{1}{3}$ by $\frac{1}{4}$

Name _____ Date _____

1. Solve for the unknown. Rewrite each phrase as a multiplication sentence. Circle the scaling factor and put a box around the number of meters.

a. $\frac{1}{3}$ as long as 6 meters = 2 meters

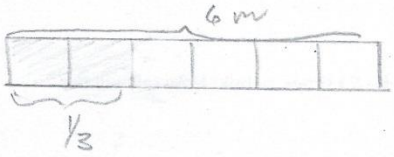
$\frac{1}{3} \times 6 = \frac{6}{3} = 2$

b. 6 times as long as $\frac{1}{3}$ meter = 2 meters

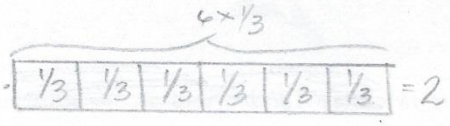
$6 \times \frac{1}{3} = \frac{6}{3} = 2$

2. Draw a tape diagram to model each situation in Problem 1, and describe what happened to the number of meters when it was multiplied by the scaling factor.

a.



b.



3. Fill in the blank with a numerator or denominator to make the number sentence true.

a. $5 \times \frac{10}{3} > 9$

b. $\frac{6}{6} \times 12 < 13$

c. $4 \times \frac{5}{5} = 4$

4. Look at the inequalities in each box. Choose a single fraction to write in all three blanks that would make all three number sentences true. Explain how you know.

a.

$\frac{2}{3} \times \frac{3}{2} > \frac{2}{3}$	$4 \times \frac{3}{2} > 4$	$\frac{5}{3} \times \frac{3}{2} > \frac{5}{3}$

b.

$\frac{2}{3} \times \frac{1}{2} < \frac{2}{3}$	$4 \times \frac{1}{2} < 4$	$\frac{5}{3} \times \frac{1}{2} < \frac{5}{3}$

Multiplying by an improper fraction gives a greater fraction. Multiplying by a proper fraction produces a smaller number.

5. Write a number in the blank that will make the number sentence true.

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

   b. Explain how multiplying by a whole number can result in a product less than 1.

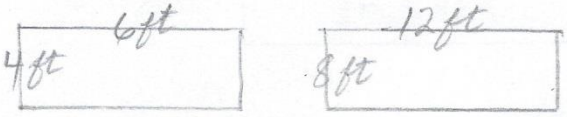
If the whole number is multiplied by a small enough proper fraction, the product is less than one.

6. In a sketch, a fountain is drawn $\frac{1}{4}$ yard tall. The actual fountain will be 68 times as tall. How tall will the fountain be?

$\frac{1}{4} \times 68 = \frac{68}{4} = 17$

The fountain will be 17 yards tall

7. In blueprints, an architect's firm drew everything $\frac{1}{24}$ of the actual size. The windows will actually measure 4 ft by 6 ft and doors measure 12 ft by 8 ft. What are the dimensions of the windows and the doors in the drawing?



$6 \times 1/24 = 6/24 = 1/4$ $\quad 12 \times 1/24 = 12/24 = 1/2$

$4 \times 1/24 = 4/24 = 1/6$ $\quad 8 \times 1/24 = 8/24 = 1/3$

The dimensions are 1/4 by 1/6, and 1/2 by 1/3

Name _____ Date _____

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

1.021	0.989	1.00

a. $3.4 \times \underline{1.00} = 3.4$ b. $\underline{1.021} \times 0.21 > 0.21$ c. $8.04 \times \underline{0.989} < 8.04$

2.

a. Sort the following expressions by rewriting them in the table.

The product is less than the boxed number:	The product is greater than the boxed number:
0.3×0.069 602×0.489 0.2×0.1	13.89×1.004 0.72×1.24 102.03×4.015

[13.89] × 1.004 [602] × 0.489 [102.03] × 4.015

[0.3] × 0.069 [0.72] × 1.24 [0.2] × 0.1

b. Explain your sorting by writing a sentence that tells what the expressions in each column of the table have in common.

On the left each number is multiplied by a scaling factor less than one. This gives a product less than the number. The second column includes numbers that are multiplied by a scaling factor greater than 1. So the product is greater

3. Write a statement using one of the following phrases to compare the value of the expressions. Then, explain how you know.

is slightly more than ***is a lot more than*** ***is slightly less than*** ***is a lot less than***

a. 4×0.988 is slightly less 4

b. 1.05×0.8 is slightly more 0.8

c. $1{,}725 \times 0.013$ is a lot less 1,725

d. 989.001×1.003 is a lot more 1.003

e. 0.002×0.911 is slightly less 0.002

4. During science class, Teo, Carson, and Dhakir measure the length of their bean sprouts. Carson's sprout is 0.9 times the length of Teo's, and Dhakir's is 1.08 times the length of Teo's. Whose bean sprout is the longest? The shortest? Explain your reasoning.

Dhakir > Teo > Carson

Dhakir's is longest. Carson's is shortest.

5. Complete the following statements, then use decimals to give an example of each.

- $a \times b > a$ will always be true when b is... greater than one
- $a \times b < a$ will always be true when b is... less than one

Name _____ Date _____

1.

a. Sort the following expressions by rewriting them in the table.

The product is less than the boxed number:	The product is greater than the boxed number:
828×0.921 0.05×0.1	12.5×1.989 0.007×1.02 2.16×1.11 321.46×1.26

$\boxed{12.5} \times 1.989$ $\boxed{828} \times 0.921$ $\boxed{321.46} \times 1.26$

$\boxed{0.007} \times 1.02$ $\boxed{2.16} \times 1.11$ $\boxed{0.05} \times 0.1$

b. What do the expressions in each column have in common?

On the left, the numbers are multiplied by a scaling factor that is less than 1. On the right, the numbers are multiplied by a scaling factor less than 1.

2. Write a statement using one of the following phrases to compare the value of the expressions. Then, explain how you know.

is slightly more than ***is a lot more than*** ***is slightly less than*** ***is a lot less than***

a. 14×0.999 is slightly less 14

b. 1.01×2.06 is slightly more 2.06

c. $1{,}955 \times 0.019$ is a lot less than 1,955

d. Two thousand × 1.0001 is slightly more two thousand

e. Two-thousandths × 0.911 is slightly less two-thousandths

3. Rachel is 1.5 times as heavy as her cousin, Kayla. Another cousin, Jonathan, weighs 1.25 times as much as Kayla. List the cousins, from lightest to heaviest, and explain your thinking.

Kayla Jonathan Rachel
Kayla is the lightest. Jonathan is only 25/100 heavier. Rachel is 1/2 heavier.

4. Circle your choice.

a. $a \times b > a$
For this statement to be true, b must be **greater than 1** **less than 1**

Write two expressions that support your answer. Be sure to include one decimal example.

$3 \times 1.2 = 3.6$
$4 \times 1.5 = 6.0$

b. $a \times b < a$
For this statement to be true, b must be **greater than 1** **less than 1**

Write two expressions that support your answer. Be sure to include one decimal example.

$3 \times 0.1 = 0.3$
$4 \times 0.9 = 3.6$

Name _____ Date _____

1. A vial contains 20 mL of medicine. If each dose is $\frac{1}{8}$ of the vial, how many mL is each dose? Express your answer as a decimal.

$20 \times \frac{1}{8} = \frac{20}{8} = 2\frac{4}{8} = 2\frac{1}{2} = 2.5$

Each dose is 2.5 mL

2. A container holds 0.7 liters of oil and vinegar. $\frac{3}{4}$ of the mixture is vinegar. How many liters of vinegar are in the container? Express your answer as both a fraction and a decimal.

$0.7 \times 0.75 =$

$\frac{7}{10} \times \frac{75}{100} = \frac{525}{1000}$

$\begin{array}{r} .75 \\ \times .7 \\ \hline .525 \end{array}$

There are 0.525 L or $\frac{525}{1000}$ L

3. Andres completed a 5-km race in 13.5 minutes. His sister's time was $1\frac{1}{2}$ times longer than his time. How long, in minutes, did it take his sister to run the race?

13.5×1.5

$\begin{array}{r} {}^{1}13.5 \\ \times 1.5 \\ \hline 675 \\ 135 \\ \hline 20.25 \end{array}$

His sister took 20.25 minutes

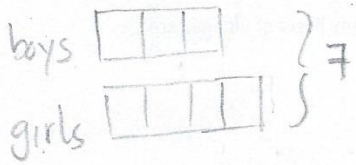
4. A clothing factory uses 1,275.2 meters of cloth a week to make shirts. How much cloth is needed to make $3\frac{3}{5}$ times as many shirts?

1,275.2 × 3.6

$$\begin{array}{r} 1,275.2 \\ \times \quad 3.6 \\ \hline 76512 \\ +\ 38256 \\ \hline 4590.72 \end{array}$$

The factory needs 4590.72

5. There are $\frac{3}{4}$ as many boys as girls in a class of fifth-graders. If there are 35 students in the class, how many are girls?



35 ÷ 7 = 5

boys 3 × 5 = 15

girls 4 × 5 = 20

There are 20 girls.

6. Ciro purchased a concert ticket for \$56. The cost of the ticket was $\frac{4}{5}$ the cost of his dinner. The cost of his hotel was $2\frac{1}{2}$ times as much as his ticket. How much did Ciro spend altogether for the concert ticket, hotel, and dinner?

ticket \$56

dinner $56 \div 4/5 = 56 \times \frac{5}{4} = \frac{280}{4} = \boxed{70}$

hotel $56 \times 2\frac{1}{2} = 112 \times 5/2 = 112 + 28 = \boxed{140}$

$$\begin{array}{r} 140 \\ +\ 70 \\ \hline 56 \\ \hline 266 \end{array}$$

Ciro spent \$266

Name _____ Date _____

1. Jesse takes his dog and cat for their annual vet visit. Jesse's dog weighs 23 pounds. The vet tells him his cat's weight is $\frac{5}{8}$ as much as his dog's weight. How much does his cat weigh?

$23 \times \frac{5}{8} = \frac{115}{8} = 1$

$8\overline{)115}$ → 14, 8, 35, 32, 3

The cat weighs $14\frac{3}{8}$ lb

2. An image of a snowflake is 1.8 centimeters wide. If the actual snowflake is $\frac{1}{8}$ the size of the image, what is the width of the actual snowflake? Express your answer as a decimal.

$1.8 \div \frac{1}{8} = 1.8 \times 8 = 14.4$

The actual snowflake is 14.4 cm

3. A community bike ride offers a short 5.7-mile ride for children and families. The short ride is followed by a long ride, $5\frac{2}{3}$ times as long as the short ride, for adults. If a woman bikes the short ride with her children, and then the long ride with her friends, how many miles does she ride altogether?

short 5.7

long $5\frac{7}{10} \times 5\frac{2}{3} = \frac{57}{10} \times \frac{17}{3} = \frac{323}{10} = 32\frac{3}{10}$ or 32.3

19 × 17 → 133, 19, 323

32.3 + 5.7 = 38.0

That woman would ride 38 miles

4. Sal bought a house for $78,524.60. Twelve years later he sold the house for $2\frac{3}{4}$ times as much. What was the sale price of the house?

78,524.60 × 2.75

78,524.60
× 2.75
39 26 23 00
+ 54 96 72 20
15 70 49 20
215,942.6500

The sales price was 215,942.65

5. In the fifth grade at Lenape Elementary School, there are $\frac{4}{5}$ as many students who do not wear glasses as those who do wear glasses. If there are 60 students who wear glasses, how many students are in the fifth grade?

$60 \div \frac{1}{5} = 60 \times 5 = 300$

There are 300 students

6. At a factory, a mechanic earns $17.25 an hour. The president of the company earns $6\frac{2}{3}$ times as much for each hour he works. The janitor at the same company earns $\frac{3}{5}$ as much as the mechanic. How much does the company pay for all three people employees' wages for one hour of work?

M $17.25

P $17.25 \times 6\frac{2}{3} = \frac{17.25 \times 20}{3} = \frac{345}{3} = 115.00$

J $\frac{3}{5} \times 17.25 = \frac{3 \times 17.25}{5} = \frac{51.75}{5} = 10.35$

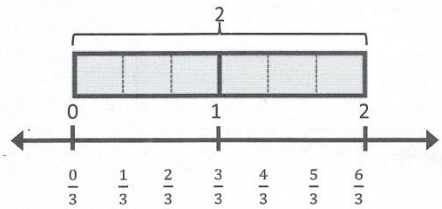
115
+ 17.25
10.35
142.60

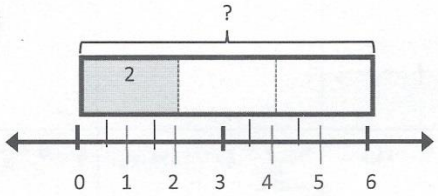
The company pays $142.60

Name _____ Date _____

1. Draw a tape diagram and a number line to solve. You may draw the model that makes the most sense to you. Fill in the blanks that follow. Use the example to help you.

Example: $2 \div \frac{1}{3} =$ 6





There are 3 thirds in 1 whole.

If 2 is $\frac{1}{3}$, what is the whole? 6

There are 6 thirds in 2 wholes.

a. $4 \div \frac{1}{2} =$ 8

There are 2 halves in 1 whole.
There are 8 halves in 4 wholes.

If 4 is $\frac{1}{2}$, what is the whole? 8

b. $2 \div \frac{1}{4} =$ 8

There are 4 fourths in 1 whole.
There are 8 fourths in 2 wholes.

If 2 is $\frac{1}{4}$, what is the whole? 8

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

There are 3 thirds in 1 whole.
There are 15 thirds in 5 wholes.

If 5 is $\frac{1}{3}$, what is the whole? 15

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

There are 5 fifths in 1 whole.
There are 15 fifths in 3 wholes.

If 3 is $\frac{1}{5}$, what is the whole? 15

2. Divide. Then, multiply to check.

a. $5 \div \frac{1}{2} = 10$ $10 \times \frac{1}{2} = 5$	b. $3 \div \frac{1}{2} = 6$ $6 \times \frac{1}{2} = 3$	c. $4 \div \frac{1}{5} = 20$ $20 \times \frac{1}{5} = 4$	d. $1 \div \frac{1}{6} = 6$ $6 \div \frac{1}{6} = 1$
e. $2 \div \frac{1}{8} = 16$ $16 \times \frac{1}{8} = 2$	f. $7 \div \frac{1}{6} = 42$ $42 \times \frac{1}{6} = 7$	g. $8 \div \frac{1}{3} = 24$ $24 \times \frac{1}{3} = 8$	h. $9 \div \frac{1}{4} = 36$ $36 \times \frac{1}{4} = 9$

3. For an art project, Mrs. Williams is dividing construction paper into fourths. How many fourths can she make from 5 pieces of construction paper?

$5 \div \frac{1}{4} = 5 \times 4 = 20$

She can make 20 fourths.

4. Use the chart below to answer the following questions.

Donnie's Diner Lunch Menu

Food	Serving Size
Hamburger	$\frac{1}{3}$ lb
Pickles	$\frac{1}{4}$ pickle
Potato chips	$\frac{1}{8}$ bag
Chocolate milk	$\frac{1}{2}$ cup

a. How many hamburgers can Donnie make with 6 pounds of hamburger meat?

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

Donnie can make 18.

b. How many pickle servings can be made from a jar of 15 pickles?

$15 \div \frac{1}{4} = 15 \times 4 = 60$

He can make 60 pickle servings.

c. How many servings of chocolate milk can he serve from a gallon of milk?

1 gallon = 16 cups

$16 \div \frac{1}{2} = 32$

He can serve 32

5. Three gallons of water fills $\frac{1}{4}$ of the elephant's pail at the zoo. How much water does the pail hold?

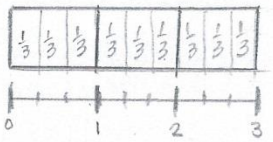
$3 \div \frac{1}{4} = 3 \times 4 = 12$

The pail holds 12 gallons

Name _____ Date _____

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

a. $3 \div \frac{1}{3} =$ 9

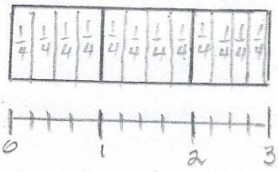


There are 3 thirds in 1 whole.

There are 9 thirds in 3 wholes.

If 3 is $\frac{1}{3}$, what is the whole? 9

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

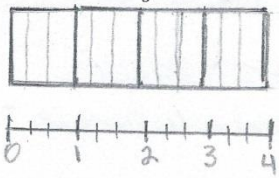


There are 4 fourths in 1 whole.

There are 12 fourths in 3 wholes.

If 3 is $\frac{1}{4}$, what is the whole? 12

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

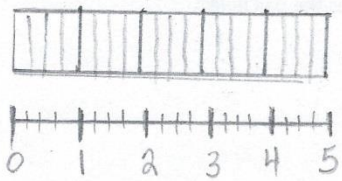


There are 3 thirds in 1 whole.

There are 12 thirds in 4 wholes.

If 4 is $\frac{1}{3}$, what is the whole? 12

d. $5 \div \frac{1}{4} =$ 20



There are 4 fourths in 1 whole.

There are 20 fourths in 5 wholes.

If 5 is $\frac{1}{4}$, what is the whole? 20

2. Divide. Then, multiply to check.

a. $2 \div \frac{1}{4} = 8$ $8 \times \frac{1}{4} = \frac{8}{4} = 2$	b. $6 \div \frac{1}{2} = 12$ $12 \times \frac{1}{2} = \frac{12}{2} = 6$	c. $5 \div \frac{1}{4} = 20$ $20 \times \frac{1}{4} = \frac{20}{4} = 5$	d. $5 \div \frac{1}{8} = 40$ $40 \times \frac{1}{8} = \frac{40}{8} = 5$
e. $6 \div \frac{1}{3} = 18$ $18 \times \frac{1}{3} = \frac{18}{3} = 6$	f. $3 \div \frac{1}{6} = 18$ $18 \times \frac{1}{6} = \frac{18}{6} = 3$	g. $6 \div \frac{1}{5} = 30$ $30 \times \frac{1}{5} = \frac{30}{5} = 6$	h. $6 \div \frac{1}{10} = 60$ $60 \times \frac{1}{10} = \frac{60}{10} = 6$

3. A principal orders 8 sub sandwiches for a teachers' meeting. She cuts the subs into thirds and puts the mini-subs onto a tray. How many mini-subs are on the tray?

$8 \div \frac{1}{3} = 8 \times 3 = 24$

There are 24

4. Some students prepare 3 different snacks. They make $\frac{1}{8}$ pound bags of nut mix, $\frac{1}{4}$ pound bags of cherries, and $\frac{1}{6}$ pound bags of dried fruit. If they buy 3 pounds of nut mix, 5 pounds of cherries, and 4 pounds of dried fruit, how many of each type of snack bag will they be able to make?

$3 \div \frac{1}{8} = 3 \times 8 = 24$

$5 \div \frac{1}{4} = 5 \times 4 = 20$

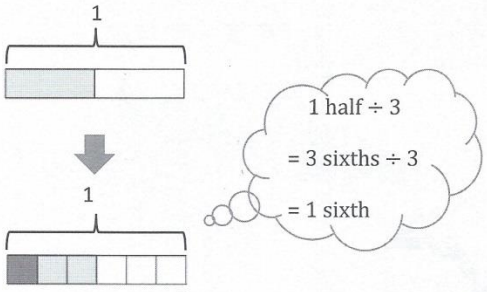
$4 \div \frac{1}{6} = 4 \times 6 = 24$

24 of nut mix, 20 of cherries, and 24 of dried fruit.

Name _____ Date _____

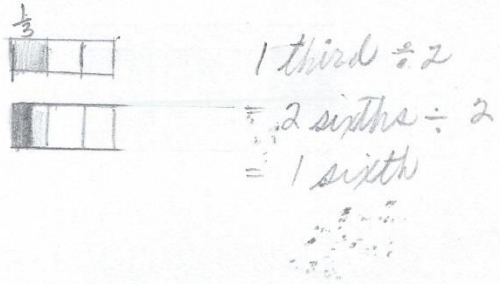
1. Draw a model or tape diagram to solve. Use the thought bubble to show your thinking. Write your quotient in the blank. Use the example to help you.

Example: $\frac{1}{2} \div 3$

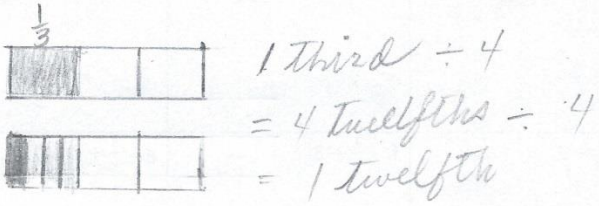


$\frac{1}{2} \div 3 = \frac{1}{6}$

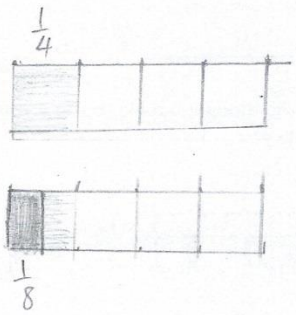
a. $\frac{1}{3} \div 2 =$ $\frac{1}{6}$



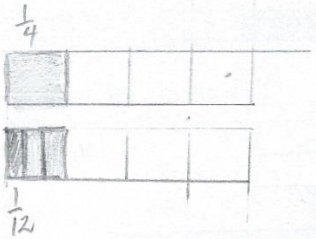
b. $\frac{1}{3} \div 4 =$ $\frac{1}{12}$



c. $\frac{1}{4} \div 2 =$ $\frac{1}{8}$



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

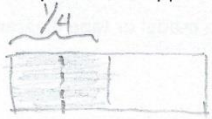


2. Divide. Then, multiply to check.

a. $\frac{1}{2} \div 7 = \frac{1}{14}$ $\frac{1}{14} \times 7 = \frac{7}{14} = \frac{1}{2}$	b. $\frac{1}{3} \div 6 = \frac{1}{18}$ $\frac{1}{18} \times 6 = \frac{6}{18} = \frac{1}{3}$	c. $\frac{1}{4} \div 5 = \frac{1}{20}$ $\frac{1}{20} \times 5 = \frac{5}{20} = \frac{1}{4}$	d. $\frac{1}{5} \div 4 = \frac{1}{20}$ $\frac{1}{20} \times 4 = \frac{4}{20} = \frac{1}{5}$
e. $\frac{1}{5} \div 2 = \frac{1}{10}$ $\frac{1}{10} \times 2 = \frac{2}{10} = \frac{1}{5}$	f. $\frac{1}{6} \div 3 = \frac{1}{18}$ $\frac{1}{18} \times 3 = \frac{3}{18} = \frac{1}{6}$	g. $\frac{1}{8} \div 2 = \frac{1}{16}$ $\frac{1}{16} \times 2 = \frac{2}{16} = \frac{1}{8}$	h. $\frac{1}{10} \div 10 = \frac{1}{100}$ $\frac{1}{100} \times 10 = \frac{10}{100} = \frac{1}{10}$

3. Tasha eats half her snack and gives the other half to her two best friends for them to share equally. What portion of the whole snack does each friend get? Draw a picture to support your response.

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



Each friend has 1/4

4. Mrs. Appler used $\frac{1}{2}$ gallon of olive oil to make 8 identical batches of salad dressing.

   a. How many gallons of olive oil did she use in each batch of salad dressing?

$\frac{1}{2} \div 8 = \frac{1}{16}$

She used 1/16 gallons in each batch

   b. How many cups of olive oil did she use in each batch of salad dressing?

8 cups ÷ 8 batches
8 ÷ 8 = 1

∴ 1 gallon = 16 cups

She used 1 cup in each batch

5. Mariano delivers newspapers. He always puts $\frac{3}{4}$ of his weekly earnings in his savings account, and then divides the rest equally into 3 piggy banks for spending at the snack shop, the arcade, and the subway.

   a. What fraction of his earnings does Mariano put into each piggy bank?

$\frac{4}{4} - \frac{3}{4} = \boxed{\frac{1}{4}}$

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

Mariano puts 1/12 into each piggy bank.

   b. If Mariano adds $2.40 to each piggy bank every week, how much does Mariano earn per week delivering papers?

2.40 × 4 = 9.60

$$\begin{array}{r} 2.40 \\ \times \quad 4 \\ \hline 9.60 \end{array}$$

Mariano earns $9.60

Name _____ Date _____

1. Solve and support your answer with a model or tape diagram. Write your quotient in the blank.

a. $\frac{1}{2} \div 4 =$ $\frac{1}{8}$

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

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

d. $\frac{1}{5} \div 2 =$ $\frac{1}{10}$

2. Divide. Then, multiply to check.

a. $\frac{1}{2} \div 10 = \frac{1}{20}$	b. $\frac{1}{4} \div 10 = \frac{1}{40}$	c. $\frac{1}{3} \div 5 = \frac{1}{15}$	d. $\frac{1}{5} \div 3 = \frac{1}{15}$
e. $\frac{1}{8} \div 4 = \frac{1}{32}$	f. $\frac{1}{7} \div 3 = \frac{1}{21}$	g. $\frac{1}{10} \div 5 = \frac{1}{50}$	h. $\frac{1}{5} \div 20 = \frac{1}{100}$

3. Teams of four are competing in a quarter-mile relay race. Each runner must run the same exact distance. What is the distance each teammate runs?

$\frac{1}{4} \div 4 = \frac{1}{16}$

Each one runs 1/16 mile

4. Solomon has read $\frac{1}{3}$ of his book. He finishes the book by reading the same amount each night for 5 nights.

   a. What fraction of the book does he read each of the 5 nights?

$\frac{2}{3} \div 5 = \frac{2}{15}$

$\frac{3}{3} = \frac{1}{3} - \boxed{\frac{3}{3}}$

Solomon reads 2/15 each night

   b. If he reads 14 pages on each of the 5 nights, how long is the book?

$14 \div \frac{1}{5} = 70$

$\frac{2}{3} = 70$

$\frac{1}{3} = 35$

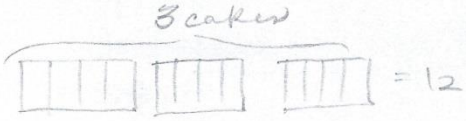
$70 + 35 = 105$

The book is 105 pages long.

Name _____ Date _____

1. Mrs. Silverstein bought 3 mini cakes for a birthday party. She cuts each cake into quarters and plans to serve each guest 1 quarter of a cake. How many guests can she serve with all her cakes? Draw a picture to support your response.

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



She can serve 12 guests.

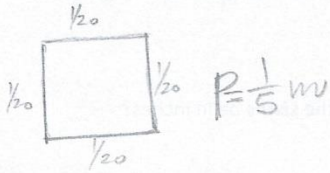
2. Mr. Pham has $\frac{1}{4}$ pan of lasagna left in the refrigerator. He wants to cut the lasagna into equal slices so he can have it for dinner for 3 nights. How much lasagna will he eat each night? Draw a picture to support your response.

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

Mr. Pham will eat 1/12 of the lasagna each night

3. The perimeter of a square is $\frac{1}{5}$ meter.
   a. Find the length of each side in meters. Draw a picture to support your response.

$\frac{1}{5} \div 4 = \frac{1}{20}$



   b. How long is each side in centimeters?

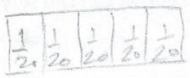
$\frac{1}{20} \times 100 = \frac{100}{20} = 5$

1 m = 100 cm

$\frac{1}{5}$ m = 20 cm

4. A pallet holding 5 identical crates weighs $\frac{1}{4}$ ton.
   a. How many tons does each crate weigh? Draw a picture to support your response.

$\frac{1}{4} \div 5 = \frac{1}{20}$



$\frac{1}{4}$ ton

Each crate weighs 1/20 ton

   b. How many pounds does each crate weigh?

$\frac{1}{20} \times 2000 = \frac{2000}{20} = 100$ 1 ton = 2000 lb

Each crate weighs 100 lb.

5. Faye has 5 pieces of ribbon, each 1 yard long. She cuts each ribbon into sixths.
   a. How many sixths will she have after cutting all the ribbons?

$5 \div \frac{1}{6} =$

Faye will have 30

   b. How long will each of the sixths be in inches?

1 yard = 36 inches

$36 \div 6 = 6$

Each sixth will be 6 inches

6. A glass pitcher is filled with water. $\frac{1}{8}$ of the water is poured equally into 2 glasses.
   a. What fraction of the water is in each glass?

$\frac{1}{8} \div 2 = \frac{1}{16}$

$\frac{1}{16}$ of the water

   b. If each glass has 3 fluid ounces of water in it, how many fluid ounces of water were in the full pitcher?

$\frac{1}{16} \div 3 = 48$

The pitcher has 48 fluid ounces

   c. If $\frac{1}{4}$ of the remaining water is poured out of the pitcher to water a plant, how many cups of water are left in the pitcher?

$48 - 6 = 42$

$\frac{4}{4} - \frac{1}{3} = \frac{3}{4}$

$42 \times \frac{3}{4} = \frac{126}{4} = 31\frac{2}{4} = 31\frac{1}{2}$ fluid ounces

8 fluid ounces = 1c

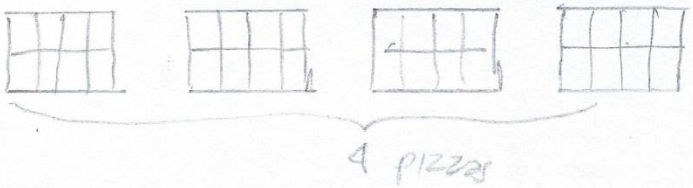
$31\frac{1}{2} \times \frac{1}{8} = \frac{63}{2} \times \frac{1}{8} = \frac{63}{16} = 3\frac{15}{16}$

There are $3\frac{15}{16}$ cups of water left

Name _____ Date _____

1. Kelvin ordered four pizzas for a birthday party. The pizzas were cut in eighths. How many slices were there? Draw a picture to support your response.

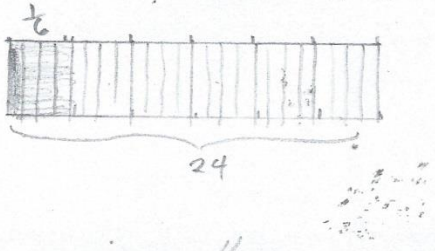
$4 \div \frac{1}{8} = 32$



There are 32 slices.

2. Virgil has $\frac{1}{6}$ of a birthday cake left over. He wants to share the leftover cake with 3 friends. What fraction of the original cake will each of the 4 people receive? Draw a picture to support your response.

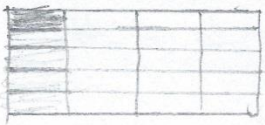
$\frac{1}{6} \div 4 = \frac{1}{24}$



Each one will receive 1/24

3. A pitcher of water contains $\frac{1}{4}$ liters of water. The water is poured equally into 5 glasses.
   a. How many liters of water are in each glass? Draw a picture to support your response.

$\frac{1}{4} \div 5 = \frac{1}{20}$



Each glass contains 1/20.

   b. Write the amount of water in each glass in milliliters.

1 liter = 1000 mL

$\frac{1}{20} \times 1000 = \frac{1000}{20} = 50$

Each glass contains 50 mL

4. Drew has 4 pieces of rope 1 meter long each. He cuts each rope into fifths.
   a. How many fifths will he have after cutting all the ropes?

$4 \div \frac{1}{5} = 20$

Drew will have 20 fifths

   b. How long will each of the fifths be in centimeters?

$\frac{1}{5} \times 100 \text{ cm} = \frac{100}{5} = 20$

Each fifth will be 20 cm long.

5. A container is filled with blueberries. $\frac{1}{6}$ of the blueberries is poured equally into two bowls.
   a. What fraction of the blueberries is in each bowl?

$\frac{1}{6} \div 2 = \frac{1}{12}$

Each bowl has $\frac{1}{12}$ of blueberries

   b. If each bowl has 6 ounces of blueberries in it, how many ounces of blueberries were in the full container?

$6 \times 12 = 72$

There were 72 ounces

   c. If $\frac{1}{5}$ of the remaining blueberries are used to make muffins, how many pounds of blueberries are left in the container?

$\frac{4}{5} \times 72 = \frac{288}{5} =$

$57\frac{3}{5} \div 16$

$\frac{5}{5} - \frac{1}{5} = \frac{4}{5}$

$5\overline{)288}$ $\quad 57$, 25, 38, 35, 3

$57\frac{3}{5}$ ounces

$16\overline{)57.6}$ $\quad 3.6$, 48, 96, 96

There are 3.6 lb

Name _____ Date _____

1. Divide. Rewrite each expression as a division sentence with a fraction divisor, and fill in the blanks. The first one is done for you.

Example: $2 \div 0.1 = 2 \div \frac{1}{10} = 20$

There are 10 tenths in 1 whole.

There are 20 tenths in 2 wholes.

a. $5 \div 0.1 = 5 \div \frac{1}{10} = 50$

There are 10 tenths in 1 whole.

There are 50 tenths in 5 wholes.

b. $8 \div 0.1 = 8 \div \frac{1}{10} = 80$

There are 10 tenths in 1 whole.

There are 80 tenths in 8 wholes.

c. $5.2 \div 0.1 = 5.2 \div \frac{1}{10} = 52$

There are 50 tenths in 5 wholes.

There are 2 tenths in 2 tenths.

There are 52 tenths in 5.2

d. $8.7 \div 0.1 = 8.7 \div \frac{1}{10} = 87$

There are 80 tenths in 8 wholes.

There are 7 tenths in 7 tenths.

There are 87 tenths in 8.7

e. $5 \div 0.01 = 5 \div \frac{1}{100} = 500$

There are 100 hundredths in 1 whole.

There are 500 hundredths in 5 wholes.

f. $8 \div 0.01 = 8 \div \frac{1}{100} = 800$

There are 100 hundredths in 1 whole.

There are 800 hundredths in 8 wholes.

g. $5.2 \div 0.01 = 5.2 \div \frac{1}{100} = 52$

There are 50 hundredths in 5 wholes.

There are 2 hundredths in 2 tenths.

There are 52 hundredths in 5.2

h. $8.7 \div 0.01 = 8.7 \div \frac{1}{100} = 87$

There are 80 hundredths in 8 wholes.

There are 7 hundredths in 7 tenths.

There are 87 hundredths in 8.7

2. Divide.

a. $6 \div 0.1$ $6 \div \frac{1}{10} = 60$	b. $18 \div 0.1$ $18 \div \frac{1}{10} = 180$	c. $6 \div 0.01$ $6 \div \frac{1}{100} = 600$
d. $1.7 \div 0.1$ $1.7 \div \frac{1}{10} = 17$	e. $31 \div 0.01$ $31 \div \frac{1}{100} = 3100$	f. $11 \div 0.01$ $11 \div \frac{1}{100} = 1100$
g. $125 \div 0.1$ $125 \div \frac{1}{10} = 1250$	h. $3.74 \div 0.01$ $3.74 \div \frac{1}{100} = 374$	i. $12.5 \div 0.01$ $12.5 \div \frac{1}{100} = 1250$

3. Yung bought \$4.60 worth of bubble gum. Each piece of gum cost \$0.10. How many pieces of bubble gum did Yung buy?

$4.60 \div \frac{1}{10} = 46$

Yung bought 46

4. Cheryl solved a problem: $84 \div 0.01 = 8{,}400$.
Jane said, "Your answer is wrong because when you divide, the quotient is always smaller than the whole amount you start with, for example, $6 \div 2 = 3$ and $100 \div 4 = 25$." Who is correct? Explain your thinking.

Cheryl is correct!
Cheryl divides by a fraction, not a whole number. The quotient is greater than

5. The U.S. Mint sells 2 ounces of American Eagle gold coins to a collector. Each coin weighs one-tenth of an ounce. How many gold coins were sold to the collector?

$2 \div \frac{1}{10} = 20$

20 coins were sold

Name _____ Date _____

1. Divide. Rewrite each expression as a division sentence with a fraction divisor, and fill in the blanks. The first one is done for you.

Example: $4 \div 0.1 = 4 \div \frac{1}{10} = 40$

There are 10 tenths in 1 whole.

There are 40 tenths in 4 wholes.

a. $9 \div 0.1 = 9 \div \frac{1}{10} = 90$

There are 10 tenths in 1 whole.

There are 90 tenths in 9 wholes.

b. $6 \div 0.1 = 6 \div \frac{1}{10} = 60$

There are _____ tenths in 1 whole.

There are _____ tenths in 6 wholes.

c. $3.6 \div 0.1 = 3.6 \div \frac{1}{10} = 36$

There are 30 tenths in 3 wholes.

There are 6 tenths in 6 tenths.

There are 36 tenths in 3.6.

d. $12.8 \div 0.1 = 12.8 \div \frac{1}{10} = 128$

There are 120 tenths in 12 wholes.

There are 8 tenths in 8 tenths.

There are 128 tenths in 12.8.

e. $3 \div 0.01 = 3 \div \frac{1}{100} = 300$

There are 100 hundredths in 1 whole.

There are 300 hundredths in 3 wholes.

f. $7 \div 0.01 = 7 \div \frac{1}{100} = 700$

There are 100 hundredths in 1 whole.

There are 700 hundredths in 7 wholes.

g. $4.7 \div 0.01 = 4.7 \div \frac{1}{100} = 470$

There are 400 hundredths in 4 wholes.

There are 70 hundredths in 7 tenths.

There are 407 hundredths in 4.7.

h. $11.3 \div 0.01 = 11.3 \div \frac{1}{100} = 1130$

There are 1100 hundredths in 11 wholes.

There are 30 hundredths in 3 tenths.

There are 1130 hundredths in 11.3.

2. Divide.

a. $2 \div 0.1$ $2 \div \frac{1}{10} = 20$	b. $23 \div 0.1$ $23 \div \frac{1}{10} = 230$	c. $5 \div 0.01$ $5 \div \frac{1}{100} = 500$
d. $7.2 \div 0.1$ $7.2 \div \frac{1}{10} = 72$	e. $51 \div 0.01$ $51 \div \frac{1}{100} = 510$	f. $31 \div 0.1$ $31 \div \frac{1}{10} = 310$
g. $231 \div 0.1$ $231 \div \frac{1}{10} = 2310$	h. $4.37 \div 0.01$ $4.37 \times \frac{1}{100} = 437$	i. $24.5 \div 0.01$ $24.5 \div \frac{1}{100} = 2450$

3. Giovanna is charged \$0.01 for each text message she sends. Last month, her cell phone bill included a \$12.60 charge for text messages. How many text messages did Giovanna send?

$12.60 \div \frac{1}{100} = 1260$

She sent 1260 text messages

4. Geraldine solved a problem: $68.5 \div 0.01 = 6{,}850$.
Ralph said, "This is wrong because a quotient can't be greater than the whole you start with. For example, $8 \div 2 = 4$ and $250 \div 5 = 50$." Who is correct? Explain your thinking.

$68.5 \div \frac{1}{100} = 6850$
Geraldine is correct. She divides by a fraction

5. The price for an ounce of gold on September 23, 2013, was \$1,326.40. A group of 10 friends decide to equally share the cost of 1 ounce of gold. How much money will each friend pay?

$1{,}326.40 \div 10 = 132.64$

Each paid \$132.64

Name _____ Date _____

1. Rewrite the division expression as a fraction and divide. The first two have been started for you.

a. $2.7 \div 0.3 = \frac{2.7}{0.3}$ $= \frac{2.7 \times 10}{0.3 \times 10}$ $= \frac{27}{3}$ $= 9$	b. $2.7 \div 0.03 = \frac{2.7}{0.03}$ $= \frac{2.7 \times 100}{0.03 \times 100}$ $= \frac{270}{3}$ $= 90$
c. $3.5 \div 0.5 = \frac{3.5}{0.5}$ $\frac{3.5 \times 10}{0.5 \times 10}$ $\frac{35}{5} =$ $= 7$	d. $3.5 \div 0.05 = \frac{3.5}{0.05}$ $\frac{3.5 \times 100}{0.05 \times 100}$ $\frac{350}{5}$ 70
e. $4.2 \div 0.7 = \frac{4.2}{0.7}$ $= \frac{4.2 \times 10}{0.7 \times 10}$ $= \frac{42}{7}$ $= 6$	f. $0.42 \div 0.07 = \frac{0.42}{0.07}$ $= \frac{0.42 \times 100}{0.07 \times 100}$ $= \frac{42}{7}$ $= 6$

g. $10.8 \div 0.9 =$ $10.8 \div \frac{9}{10} =$ $= \frac{1080}{9}$ $= 120$	h. $1.08 \div 0.09 =$ $1.08 \div \frac{9}{100} =$ $= \frac{10800}{9} =$ $= 1200$
i. $3.6 \div 1.2 =$ $3.6 \div \frac{120}{10}$ $= \frac{360}{120}$ $= 3$	j. $0.36 \div 0.12 =$ $0.36 \div \frac{12}{100}$ $= \frac{36}{12}$ $= 3$
k. $17.5 \div 2.5 =$ $= 17.5 \div \frac{25}{10}$ $= \frac{175}{25}$ $= 7$	l. $1.75 \div 0.25 =$ $1.75 \div \frac{25}{100}$ $= \frac{175}{25}$ $= 7$

2. $15 \div 3 = 5$. Explain why it is true that $1.5 \div 0.3$ and $0.15 \div 0.03$ have the same quotient.

In both divisions the relationships between their dividends and divisors is the same. Their dividend is 5 times the divisor

3. Mr. Volok buys 2.4 kg of sugar for his bakery.

   a. If he pours 0.2 kg of sugar into separate bags, how many bags of sugar can he make?

$2.4 \div \frac{2}{10} = \frac{24}{2} = 12$

Mr Volok can make 12 bags of sugar

   b. If he pours 0.4 kg of sugar into separate bags, how many bags of sugar can he make?

$2.4 \div \frac{4}{10} = \frac{24}{4} = 6$

He makes 6 bags

4. Two wires, one 17.4 meters long and one 7.5 meters long, were cut into pieces 0.3 meters long. How many such pieces can be made from both wires?

$17.4 \div \frac{3}{10} = \frac{174}{3} = 58$

$7.5 \div \frac{3}{10} \quad \frac{75}{3} = 25$

$58 + 25 = 83$

83 pieces

5. Mr. Smith has 15.6 pounds of oranges to pack for shipment. He can ship 2.4 pounds of oranges in a large box and 1.2 pounds in a small box. If he ships 5 large boxes, what is the minimum number of small boxes required to ship the rest of the oranges?

$2.4 \times 5 = 12.0$

$15.6 - 12 = 3.6$

$3.6 \div 1.2 = 3.6 \div \frac{12}{10} = \frac{36}{12} = 3$

He requires 3 small boxes

Name _____ Date _____

1. Rewrite the division expression as a fraction and divide. The first two have been started for you.

a. $2.4 \div 0.8 = \frac{2.4}{0.8}$ $= \frac{2.4 \times 10}{0.8 \times 10}$ $= \frac{24}{8}$ $= 3$	b. $2.4 \div 0.08 = \frac{2.4}{0.08}$ $= \frac{2.4 \times 100}{0.08 \times 100}$ $= \frac{240}{8}$ $= 30$
c. $4.8 \div 0.6 = \frac{4.8}{0.6}$ $\frac{4.8 \times 10}{0.6 \times 10} = \frac{48}{6}$ $= 8$	d. $0.48 \div 0.06 = \frac{0.48}{0.06}$ $\frac{0.48 \times 100}{0.06 \times 100} = \frac{48}{6}$ $= 8$
e. $8.4 \div 0.7 = \frac{8.4}{0.7}$ $\frac{8.4 \times 10}{0.7 \times 10} = \frac{84}{7}$ $= 12$	f. $0.84 \div 0.07 = \frac{0.84}{0.07}$ $\frac{0.84 \times 100}{0.07 \times 100} = \frac{84}{7}$ $= 12$

g. $4.5 \div 1.5 =$ $\frac{4.5}{1.5} = \frac{45}{15} = 3$	h. $0.45 \div 0.15 =$ $\frac{0.45}{0.15} = \frac{45}{15} = 3$
i. $14.4 \div 1.2 =$ $\frac{14.4}{1.2} = \frac{144}{12} = 12$	j. $1.44 \div 0.12 =$ $\frac{1.44}{0.12} = \frac{144}{12} = 12$

2. Leann says $18 \div 6 = 3$, so $1.8 \div 0.6 = 0.3$ and $0.18 \div 0.06 = 0.03$. Is Leann correct? Explain how to solve these division problems.

No. 1.8 and 0.6 are tenths, so $\frac{1.8}{0.6} = \frac{18}{6} = 3$

0.18 and 0.06 are hundredths, so $\frac{0.18}{0.06} = \frac{18}{6} = 3$

3. Denise is making bean bags. She has 6.4 pounds of beans.

   a. If she makes each bean bag 0.8 pounds, how many bean bags will she be able to make?

$6.4 \div 0.8 = \frac{64}{8} = 8$

She will make 8.

   b. If she decides instead to make mini bean bags that are half as heavy, how many can she make?

$6.4 \div 0.4 = \frac{64}{4} = 16$

She can have 16.

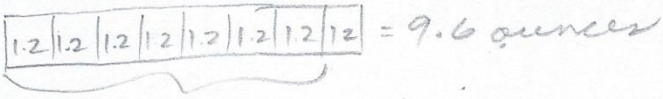
4. A restaurant's small salt shakers contain 0.6 ounces of salt. Its large shakers hold twice as much. The shakers are filled from a container that has 18.6 ounces of salt. If 8 large shakers are filled, how many small shakers can be filled with the remaining salt?

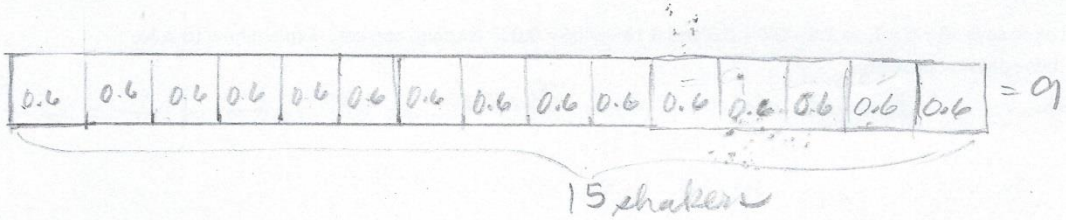
large
$8 \times 1.2 = 9.6$ ounces

$$\begin{array}{r} 18.6 \\ -\ 9.6 \\ \hline 9.0 \end{array}$$

$9 \div 0.6 = 9 \div \frac{6}{10} = \frac{90}{6} = 15$ shakers

large shakers 1.2 each





15 shakers can be filled