Lesson 3.1 Adding Decimals to Tenths

Align decimal points.

```
addend ——→    32.7
addend ——→  +  4.3
  sum   ——→    37.0
```

Align decimal in sum.

To add decimals, first align the decimal point in the addends. Then, add.

Add.

	a	b	c	d
1.	0.3 + 0.6	1.1 + 1.3	2.3 + 0.4	5.2 + 4.6
2.	5.3 + 4.9	7.9 + 0.7	13.3 + 5.3	14.5 + 8.6
3.	1.0 + 0.3	88.0 + 12.4	44.1 + 2.5	30.0 + 15.7
4.	313.1 + 237.4	93.9 + 17.0	556.7 + 5.3	80.8 + 32.5
5.	0.3 0.1 + 0.0	1.4 0.2 + 0.1	32.1 8.1 + 2.0	70.0 2.1 + 0.1
6.	123.7 24.5 + 3.1	434.5 + 32.0	17.1 12.3 + 5.0	32.5 + 10.3

Lesson 3.2 Adding Decimals to Hundredths

To add decimals to hundredths, line up the decimal points. Then, add normally.

$$
\begin{array}{r} \overset{1}{26.2} \\ +\ 5.3 \\ \hline 31.5 \end{array}
\qquad
\begin{array}{r} \overset{1}{4.65} \\ 0.08 \\ +\ 7.34 \\ \hline 12.07 \end{array}
$$

Add.

	a	b	c	d
1.	3.2 + 8.5	0.73 + 0.88	1.84 + 2.39	1.44 + 8.37
2.	0.01 + 2.30	27.12 + 13.09	42.32 + 2.01	6.54 + 3.98
3.	2.72 3.51 + 4.22	68.52 1.72 + 0.55	27.15 105.21 + 2.63	7.2 8.8 + 17.5
4.	5.3 + 2.8	68.68 + 8.48	32.12 + 14.21	76.58 + 24.3
5.	6.50 + 8.72	486.25 + 103.88	168.42 + 35.69	25.09 + 3.11
6.	0.11 + 0.65	4.21 + 8.38	68.68 + 25.52	2.00 + 6.13
7.	3.16 2.12 + 1.61	0.01 1.40 + 0.50	0.23 0.60 + 0.72	4.00 2.90 + 0.02

Lesson 3.3 Subtracting Decimals to Tenths

Align decimal points.

minuend ⟶ 32.8
subtrahend ⟶ − 1.5
difference ⟶ 31.3

Align decimal points
in difference.
The difference is 31.3

To subtract decimals, first align the decimal points in the minuend and subtrahend. Then, subtract decimals like whole numbers.

Align decimal points.

$\overset{1}{\cancel{}}\,\overset{18}{\cancel{2}}$
minuend ⟶ 142.8
subtrahend ⟶ − 1.9
difference ⟶ 140.9

Align decimal points
in difference.
The difference is 140.9

Subtract.

	a	b	c	d	e
1.	75.2 − 4.1	42.8 − 12.6	1.2 − 1.1	0.3 − 0.2	10.3 − 7.6
2.	576.2 − 341.1	87.0 − 1.1	1.3 − 0.1	60.4 − 7.1	117.1 − 24.0
3.	43.4 − 21.5	32.1 − 0.0	5.1 − 2.3	98.0 − 17.0	0.03 − 0.01
4.	7.8 − 0.5	52.4 − 23.8	1.9 − 0.7	0.9 − 0.0	10.1 − 8.3
5.	3.9 − 1.1	33.9 − 15.7	4.3 − 1.7	3.9 − 1.3	22.8 − 17.5
6.	2.4 − 0.2	2.9 − 0.7	58.5 − 24.9	75.0 − 18.2	183.7 − 142.9

Lesson 3.4 Subtracting Decimals to Hundredths

To subtract decimals to hundredths, line up the decimal points. Then, subtract normally.

$$
\begin{array}{r} 25.8 \\ -\ 11.3 \\ \hline 14.5 \end{array}
\qquad
\begin{array}{r} \overset{3\ 1}{17.\cancel{41}} \\ -\ 15.33 \\ \hline 2.08 \end{array}
$$

Subtract.

	a	b	c	d	e
1.	0.8 − 0.3	2.6 − 1.8	3.7 − 1.8	0.96 − 0.27	1.9 − 0.4
2.	18.62 − 11.58	0.45 − 0.29	0.86 − 0.53	8.6 − 7.3	11.6 − 8.8
3.	43.6 − 27.3	15.32 − 14.95	0.65 − 0.32	2.69 − 0.12	8.04 − 0.93
4.	8.45 − 4.23	27.8 − 13.4	62.43 − 38.20	14.8 − 8.9	12.68 − 4.92
5.	19.6 − 2.8	18.50 − 9.36	54.82 − 28.66	76.8 − 35.1	188.4 − 93.1
6.	14.72 − 12.86	7.40 − 5.94	4.08 − 1.39	8.6 − 7.3	5.8 − 0.9
7.	88.4 − 19.2	48.66 − 12.20	9.92 − 4.38	7.4 − 3.7	21.25 − 15.08

Lesson 3.5 Inserting Zeros to Add and Subtract

You may insert zero to help you add.

$$
\begin{array}{r}
0.6 \\
0.39 \\
+1.23 \\
\hline
\end{array}
\qquad
\begin{array}{r}
\overset{1\ \ 1}{0.60} \\
0.39 \\
+1.23 \\
\hline
2.22
\end{array}
$$

You may insert zeros to help subtract.

$$
\begin{array}{r}
4.8 \\
-2.13 \\
\hline
\end{array}
\qquad
\begin{array}{r}
\overset{7\ 1}{4.8\!0} \\
-2.13 \\
\hline
2.67
\end{array}
$$

Add or subtract.

	a	b	c	d	e
1.	2.1 + 0.25	0.48 + 1.10	12.7 + 3.26	49.76 + 3.10	5.99 + 3.25
2.	0.87 − 0.40	5.36 − 4.10	3.08 − 0.72	2.01 + 1.2	7.4 + 2.75
3.	14.37 + 3.00	26.3 + 5.25	8.81 + 0.13	5.63 + 2.1	6.31 + 5.80
4.	8.3 − 2.21	9.7 − 0.86	18.3 − 7.26	8.8 + 3.26	24.2 + 5.41
5.	4.72 + 8.50	0.6 + 0.42	0.92 + 4.08	8.3 + 0.61	2.57 + 8.80
6.	63.2 − 5.24	0.9 − 0.26	102.54 − 7.68	7. − 4.21	14.3 − 6.27
7.	1.83 4.34 + 6.20	6.74 8.33 + 0.2	26.14 − 8.09	14.1 − 8.09	0.08 − 0.01

Lesson 3.6 Problem Solving

SHOW YOUR WORK

Solve each problem.

1. Jeff wants to buy a vase for $32.75. He only has
   $25.15. How much does Jeff have to borrow from
   his brother to buy the vase?

   He has to borrow _____.

2. Booker has to pay his rent. He has $1,252.45 in the
   bank. His rent is $672.30. How much money will
   Booker have left in the bank after he pays his rent?

   Booker will have _____ left in the bank.

3. The Thomas triplets want to buy some oranges.
   Justin has 23 cents, Jarrod has 45 cents, and Jeremy
   has 52 cents. How much money do the triplets have?

   The triplets have _____.

4. A school lunch costs $1.55. Sean has $2.45. How
   much money will he have left after buying lunch?

   Sean will have _____.

5. Mr. Wilson just received his bill for $1,867.85
   for the wedding dinner party for his daughter. His
   budget for the dinner was $2,000. How much less
   did the dinner cost than he expected?

   The dinner cost _____ less than he
   expected.

6. Opal is buying groceries for dinner. Ravioli costs
   $3.25, salad costs $1.15, and bread costs $0.35.
   How much do Opal's groceries cost?

   The groceries cost _____.

1.
2.
3.
4.
5.
6.

Lesson 3.7   Multiplying Decimals Using Models

0.6   ×   0.5   =   0.30
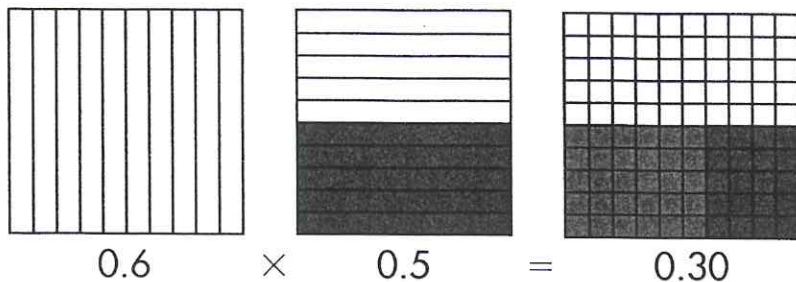
Use models to solve the problems below.

1.   0.3 × 0.7 = _____
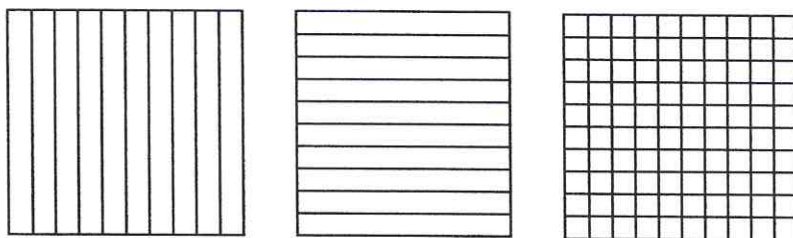
2.   0.7 × 0.2 = _____

3.   0.4 × 0.8 = _____
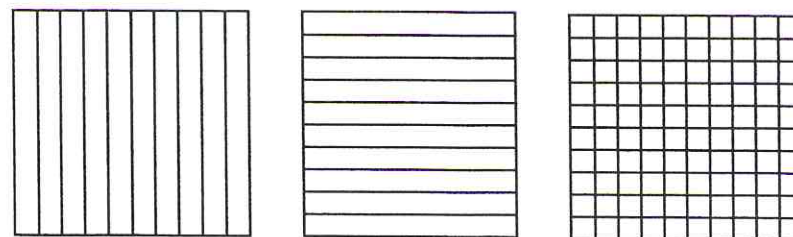
Lesson 3.8 Multiplying Decimals Using Rules

When multiplying decimals, count the number of decimal places in each factor to figure out the placement of the decimal point in the product.

3	0.3	0.3	0.3
× 5	× 5	× 0.5	× 0.05
15	1.5	0.15	0.015
0 decimal places	1 decimal place	2 decimal places	3 decimal places

How many decimal places will be in the product of the following multiplication problems?

	a	b	c
1.	3.25 × 4.2	6.3 × 9.8	5.6 × 8.2
	_____	_____	_____
2.	5.3 × 7	9.35 × 8.43	2.8 × 7.46
	_____	_____	_____

Multiply to find the answer. Underline the decimal places in the factors and in the product.

	a	b	c	d
3.	5.44	25.9	291.23	3.08
	× 901.02	× 47.6	× 4.34	× 608.8
	_____	_____	_____	_____
4.	908.01	92.5	901.3	11.4
	× 4.11	× 50.7	× 8.2	× 22.4
	_____	_____	_____	_____

Lesson 3.9 Multiplication Practice

Multiply.

	a	b	c	d	e
1.	1.2 × 3	0.61 × 6	0.58 × 12	1.21 × 3	32.7 × 2
2.	3.7 × 1.5	6.24 × 2.8	3.73 × 0.77	4.38 × 0.6	1.79 × 2.5
3.	5.06 × 1.1	7.30 × 0.2	3.46 × 8.7	0.57 × 9	1.63 × 2.7
4.	6.07 × 3	5.82 × 0.4	2.10 × 1.01	4.35 × 0.8	7.42 × 6
5.	3.4 × 2	2.2 × 3.6	43.6 × 2.94	0.72 × 0.09	9.91 × 1.2

Lesson 3.10 Dividing Decimals Using Models

| 1.2 | ÷ | 0.4 | 3 |
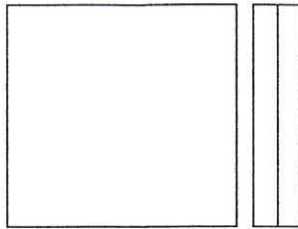
Draw a hundreds block and 2 tens bars to show the number 1.2.
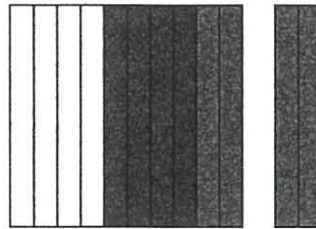
Divide the hundreds block into tens bars and shade each group of 4-tenths a different color.

Count the number of groups of 4 tenths. The total is your quotient.

Draw models to solve the problems.

1. 2.4 ÷ 0.8 = _____

2. 1.6 ÷ 0.4 = _____

3. 1.6 ÷ 0.8 = _____

4. 1.4 ÷ 0.7 = _____

Lesson 3.11 Dividing Decimals Using Rules

When the divisor of a division problem contains a decimal point, multiply both the divisor and the dividend by the power of ten needed to make the divisor a whole number. Then, solve the problem.

$$9.45 \div 0.9 =$$
$$(9.45 \times 10) \div (0.9 \times 10) =$$
$$94.5 \div 9 = 10.5$$

When multiplying by 10 to the first power, move the decimal point to the right one place. Add or remove zeros if necessary.

Write the power of ten needed to solve each problem. Then, solve the problem.

	a	b	c
1.	$0.11)\overline{1.87}$	$0.13)\overline{1.95}$	$1.5)\overline{2.4}$
	Power of 10 _____	Power of 10 _____	Power of 10 _____
2.	$0.18)\overline{1.62}$	$0.12)\overline{1.56}$	$1.8)\overline{1.62}$
	Power of 10 _____	Power of 10 _____	Power of 10 _____
3.	$1.25)\overline{11}$	$1.3)\overline{2.34}$	$0.18)\overline{2.34}$
	Power of 10 _____	Power of 10 _____	Power of 10 _____
4.	$1.3)\overline{2.47}$	$0.1)\overline{1.60}$	$0.9)\overline{1.62}$
	Power of 10 _____	Power of 10 _____	Power of 10 _____

Lesson 3.12 Division Practice

To make the divisor into a whole number, move the decimal point in the divisor and the dividend the same number of places to the right.

$$1.5\overline{)40.5} = 15\overline{)405}$$
$$\begin{array}{r} 27 \\ 15\overline{)405} \\ -30 \\ \hline 105 \\ -105 \\ \hline 0 \end{array}$$

$$1.05\overline{)24.15} = 105\overline{)2415}$$
$$\begin{array}{r} 23 \\ 105\overline{)2415} \\ -210 \\ \hline 315 \\ -315 \\ \hline 0 \end{array}$$

Divide.

	a	b	c	d
1.	$0.03\overline{)45.6}$	$1.7\overline{)20.4}$	$3.8\overline{)16.72}$	$0.5\overline{)1.87}$
2.	$7.4\overline{)28.86}$	$1.07\overline{)67.41}$	$0.22\overline{)8.03}$	$0.15\overline{)0.99}$
3.	$0.08\overline{)2.52}$	$0.02\overline{)6.56}$	$1.5\overline{)8.4}$	$6.4\overline{)27.04}$
4.	$0.65\overline{)0.91}$	$0.08\overline{)0.17}$	$0.17\overline{)3.06}$	$2.1\overline{)3.36}$

Lesson 3.13 Problem Solving

SHOW YOUR WORK

Solve each problem.

1. Fred bought 7 games on clearance for $104.65. Each game was on sale for the same price. How much did each game cost?

   Each game cost _____.

   1.

2. Gas costs $1.64 a gallon. Elaine spent $23.78 at the gas station. How many gallons of gas did she buy?

   Elaine bought _____ gallons of gas.

   2.

3. There are 2.5 servings in a can of tuna fish. How many servings are there in 7 cans?

   There are _____ servings in 7 cans.

   3.

4. A grain distributor can process 14.6 tons of grain an hour. How much can the distributor process in 8.75 hours?

   The distributor can process _____ tons of grain.

   4.

5. Rhonda earned $324.65 delivering newspapers. She promised her sister 0.2 of her earnings for helping her. How much does Rhonda owe her sister?

   Rhonda owes her sister _____.

   5.

6. A car traveled 48.36 miles in one hour. What was its average speed per minute?

   Its average speed was _____ miles per minute.

   6.

7. There are 5.28 cups of pudding to be put into 6 dishes. How much pudding should be put into each dish to make them equal?

   Each dish should get _____ cups of pudding.

   7.