

Dividing Decimals

A flat is 1 whole, a rod is 0.1 and a small square is 0.01.

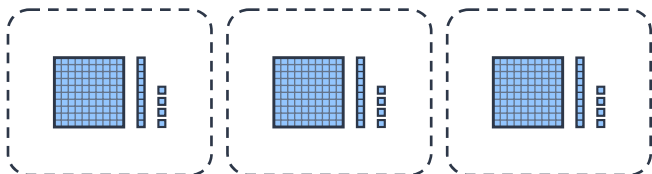
Share the blocks equally. Draw what each group gets.

Example

Share 3.42 in 3 equal groups.



Trade 1 rod for 10 small squares.



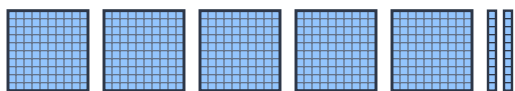
$$3.42 \div 3 = \underline{1.14}$$

1. Share 1.35 in 3 equal groups.



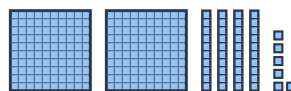
$$1.35 \div 3 = \underline{\hspace{2cm}}$$

2. Share 5.2 in 4 equal groups.



$$5.2 \div 4 = \underline{\hspace{2cm}}$$

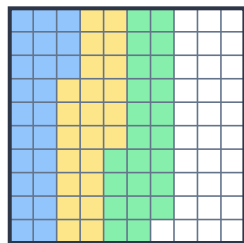
3. Share 2.46 in 2 equal groups.



$$2.46 \div 2 = \underline{\hspace{2cm}}$$

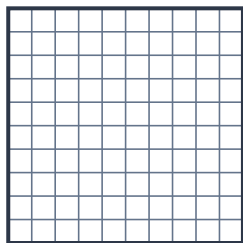
Shade the number. Split it into equal groups, a new color for each.

Example



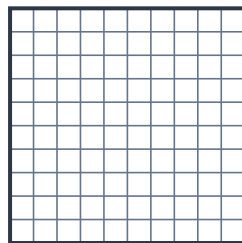
$$0.69 \div 3 = \underline{0.23}$$

4.



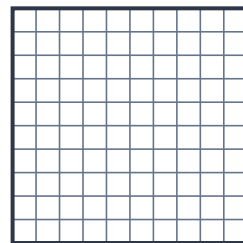
$$0.8 \div 2 = \underline{\hspace{2cm}}$$

5.



$$0.78 \div 3 = \underline{\hspace{2cm}}$$

6.



$$0.54 \div 2 = \underline{\hspace{2cm}}$$

Dividing Decimals

Estimate first. Then divide, putting the point straight up.

Estimate. Then divide. Put the point right above the point.

Example Estimate

$16 \div 4 = 4$

		4	.	3	4
4	)	1	7	.	3
		1	6		
			1	3	
				1	2
					1
					6
					6
					0

1. Estimate

3	)	8	.	5	2

2. Estimate

3	)	6	.	2	4

3. Estimate

4	)	3	.	6

4. Estimate

6	)	2	9	.	4

5. Estimate

5	)	1	1	.	6	5

6. Estimate

7	)	4	5	.	3	6

7. Estimate

8	)	6	.	7	2

The digits of each quotient are given. Estimate to place the point.

Problem	Estimate	Digits	Quotient
Example $31.2 \div 4$	$32 \div 4 = 8$	78	7.8
8. $9.81 \div 3$	$\div 3 =$	327	
9. $86.5 \div 5$	$\div 5 =$	173	
10. $5.88 \div 6$	$\div 6 =$	98	

Divide by 2-digit numbers. Write zeros to keep dividing.

Estimate. Then divide by the 2-digit number.

$$36 \div 12 = 3$$

$$\begin{array}{r} 3.2 \\ 12 \overline{) 38.4} \\ \underline{- 36} \\ 24 \\ \underline{- 24} \\ 0 \end{array}$$

$$24 \overline{) 93.12}$$

$$25 \overline{) 61.75}$$

$$32 \overline{) 486.4}$$

Write a point and zeros after the number. Keep dividing to the end.

$$48 \div 24 = 2$$

$$\begin{array}{r} 2.25 \\ 24 \overline{) 54.00} \\ \underline{- 48} \\ 60 \\ \underline{- 48} \\ 120 \\ \underline{- 120} \\ 0 \end{array}$$

$$36 \overline{) 63}$$

$$15 \overline{) 222}$$

$$16 \overline{) 92}$$

Is the point in the right place? Estimate to check. Fix it if not.

If not, fix it:

If not, fix it:

If not, fix it:

Dividing Decimals

Divide by a decimal: how many tenths or hundredths fit?

Each strip is 1 whole. Draw jumps of the divisor. How many fit?

Example

How many jumps of 0.3 make 2.4?

$2.4 \div 0.3 = 8$

1.

How many jumps of 0.5 make 2.5?

$2.5 \div 0.5 =$

2.

How many jumps of 0.4 make 2.8?

$2.8 \div 0.4 =$

Count both numbers in tenths or both in hundredths. Then divide.

Problem	Count in		Divide the counts	Answer
Example $1.5 \div 0.05$	tenths	hundredths	$150 \div 5$	30
3. $4.2 \div 0.7$	tenths	hundredths	$\div$	
4. $0.96 \div 0.12$	tenths	hundredths	$\div$	
5. $2 \div 0.04$	tenths	hundredths	$\div$	

Times 0.1 is the same as $\div 10$. Divided by 0.1 is the same as $\times 10$.

Example

$46 \times 0.1 = 46 \div 10 = 4.6$

$0.3 \div 0.01 = 0.3 \times 100 = 30$

6.

$3.9 \times 0.1 = 3.9 =$

7.

$7.3 \div 0.1 = 7.3 =$

8.

$64 \times 0.01 = 64 =$

9.

$1.7 \div 0.01 = 1.7 =$

10.

$0.58 \div 0.1 = 0.58 =$

11.

$815 \times 0.01 = 815 =$

Dividing Decimals

Estimate first. Then solve, and find the better buy.

Estimate first. Then solve. Show your work.

Example

3 friends share a pizza that costs \$14.85. Each pays the same. How much does each friend pay?

Estimate: $\$15 \div 3 = \$5$

$\$14.85 \div 3 = \$4.95$

Answer: \$ 4.95

1. A tank holds 52.8 L of water. It is poured equally into 16 jugs. How much water is in each jug?

Estimate: _____

Answer: _____ L

2. 4 friends spend \$38.60 on tickets and \$6 on snacks. They share the cost equally. How much does each pay?

Estimate: _____

Answer: \$ _____

3. Mia has 4.5 kg of trail mix. She fills bags that hold 0.25 kg each and gives 7 bags away. How many bags are left?

Estimate: _____

Answer: _____ bags

Find what one costs in each deal. Circle the better buy.

Item	Deal A	Deal B	One costs in A	One costs in B
Example Juice boxes	4 for \$3.80	6 for \$5.10	\$ 0.95	\$ 0.85
4. Granola bars	5 for \$4.45	8 for \$7.36	\$ _____	\$ _____
5. Tennis balls	3 for \$4.26	12 for \$15.48	\$ _____	\$ _____
6. Pencils	10 for \$2.90	24 for \$7.20	\$ _____	\$ _____

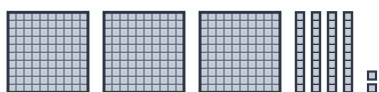
Dividing Decimals

A flat is 1 whole, a rod is 0.1 and a small square is 0.01.

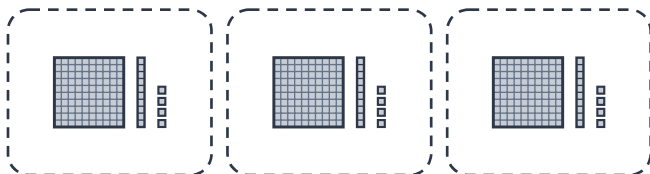
Share the blocks equally. Draw what each group gets.

Example

Share 3.42 in 3 equal groups.



Trade 1 rod for 10 small squares.



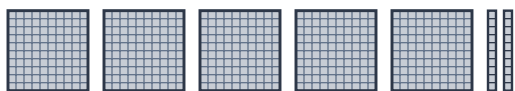
$$3.42 \div 3 = \underline{1.14}$$

1. Share 1.35 in 3 equal groups.



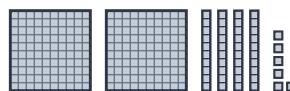
$$1.35 \div 3 = \underline{\hspace{2cm}}$$

2. Share 5.2 in 4 equal groups.



$$5.2 \div 4 = \underline{\hspace{2cm}}$$

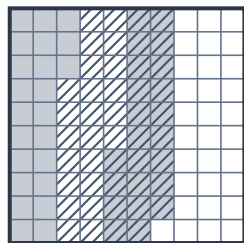
3. Share 2.46 in 2 equal groups.



$$2.46 \div 2 = \underline{\hspace{2cm}}$$

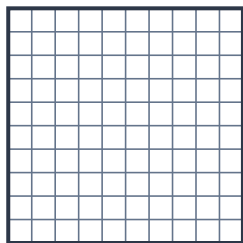
Shade the number. Split it into equal groups, a new color for each.

Example



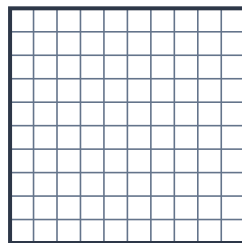
$$0.69 \div 3 = \underline{0.23}$$

4.



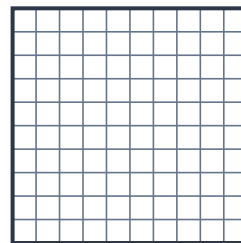
$$0.8 \div 2 = \underline{\hspace{2cm}}$$

5.



$$0.78 \div 3 = \underline{\hspace{2cm}}$$

6.



$$0.54 \div 2 = \underline{\hspace{2cm}}$$

Estimate first. Then divide, putting the point straight up.

Estimate. Then divide. Put the point right above the point.

[illegible]

The digits of each quotient are given. Estimate to place the point.

Problem	Estimate	Digits	Quotient
Example $31.2 \div 4$	<u>32</u> $\div 4 =$ <u>8</u>	78	<u>7.8</u>
8. $9.81 \div 3$	<u> </u> $\div 3 =$ <u> </u>	327	<u> </u>
9. $86.5 \div 5$	<u> </u> $\div 5 =$ <u> </u>	173	<u> </u>
10. $5.88 \div 6$	<u> </u> $\div 6 =$ <u> </u>	98	<u> </u>

Dividing Decimals

Divide by 2-digit numbers. Write zeros to keep dividing.

Estimate. Then divide by the 2-digit number.

Example Estimate
 $36 \div 12 = 3$

		3	.	2	
12	)	3	8	.	4
		-	3	6	
			2	4	
			-	2	4
				0	

1. Estimate

24	)	9	3	.	1	2

2. Estimate

25	)	6	1	.	7	5

3. Estimate

32	)	4	8	.	6	.	4

Write a point and zeros after the number. Keep dividing to the end.

Example Estimate
 $48 \div 24 = 2$

		2	.	2	5		
24	)	5	4	.	0	0	
		-	4	8			
			6	0			
			-	4	8		
				1	2	0	
				-	1	2	0
						0	

4. Estimate

36	)	6	3		

5. Estimate

15	)	2	2	2		

6. Estimate

16	)	9	2		

Is the point in the right place? Estimate to check. Fix it if not.

7. $7.56 \div 18 = 4.2$

Right? Yes No

If not, fix it: _____

8. $40.8 \div 24 = 1.7$

Right? Yes No

If not, fix it: _____

9. $275.2 \div 32 = 86$

Right? Yes No

If not, fix it: _____

Dividing Decimals

Divide by a decimal: how many tenths or hundredths fit?

Each strip is 1 whole. Draw jumps of the divisor. How many fit?

Example

How many jumps of 0.3 make 2.4?

$2.4 \div 0.3 = \underline{\hspace{1cm}} 8$



1.

How many jumps of 0.5 make 2.5?

$2.5 \div 0.5 = \underline{\hspace{1cm}}$



2.

How many jumps of 0.4 make 2.8?

$2.8 \div 0.4 = \underline{\hspace{1cm}}$



Count both numbers in tenths or both in hundredths. Then divide.

Problem	Count in		Divide the counts	Answer
Example $1.5 \div 0.05$	tenths	<u>hundredths</u>	$\underline{150} \div \underline{5}$	<u>30</u>
3. $4.2 \div 0.7$	tenths	hundredths	$\underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$	<u> </u>
4. $0.96 \div 0.12$	tenths	hundredths	$\underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$	<u> </u>
5. $2 \div 0.04$	tenths	hundredths	$\underline{\hspace{1cm}} \div \underline{\hspace{1cm}}$	<u> </u>

Times 0.1 is the same as $\div 10$. Divided by 0.1 is the same as $\times 10$.

Example

$46 \times 0.1 = 46 \div 10 = \underline{4.6}$

$0.3 \div 0.01 = 0.3 \times 100 = \underline{30}$

6.

$3.9 \times 0.1 = 3.9 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

7.

$7.3 \div 0.1 = 7.3 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

8.

$64 \times 0.01 = 64 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

9.

$1.7 \div 0.01 = 1.7 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

10.

$0.58 \div 0.1 = 0.58 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

11.

$815 \times 0.01 = 815 \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

Dividing Decimals

Estimate first. Then solve, and find the better buy.

Estimate first. Then solve. Show your work.

Example

3 friends share a pizza that costs \$14.85. Each pays the same. How much does each friend pay?

Estimate: $\$15 \div 3 = \$5$

$\$14.85 \div 3 = \$4.95$

Answer: \$ 4.95

1. A tank holds 52.8 L of water. It is poured equally into 16 jugs. How much water is in each jug?

Estimate: _____

Answer: _____ L

2. 4 friends spend \$38.60 on tickets and \$6 on snacks. They share the cost equally. How much does each pay?

Estimate: _____

Answer: \$ _____

3. Mia has 4.5 kg of trail mix. She fills bags that hold 0.25 kg each and gives 7 bags away. How many bags are left?

Estimate: _____

Answer: _____ bags

Find what one costs in each deal. Circle the better buy.

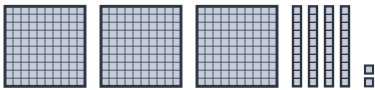
Item	Deal A	Deal B	One costs in A	One costs in B
Example Juice boxes	4 for \$3.80	6 for \$5.10	\$ 0.95	\$ 0.85
4. Granola bars	5 for \$4.45	8 for \$7.36	\$ _____	\$ _____
5. Tennis balls	3 for \$4.26	12 for \$15.48	\$ _____	\$ _____
6. Pencils	10 for \$2.90	24 for \$7.20	\$ _____	\$ _____

Dividing Decimals

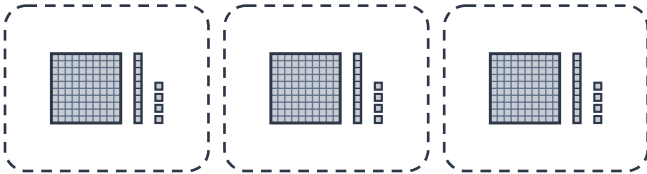
A flat is 1 whole, a rod is 0.1 and a small square is 0.01.

Share the blocks equally. Draw what each group gets.

Example Share 3.42 in 3 equal groups.

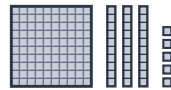


Trade 1 rod for 10 small squares.



$$3.42 \div 3 = \underline{1.14}$$

1. Share 1.35 in 3 equal groups.

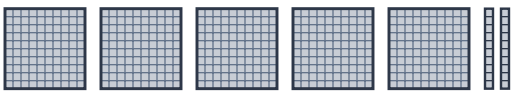


Trade 1 flat, then 1 rod.

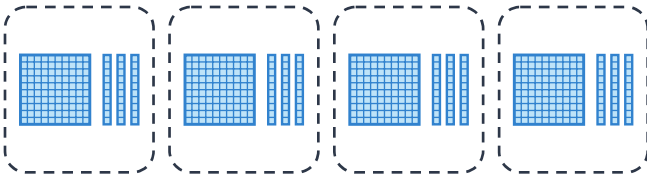


$$1.35 \div 3 = \underline{0.45}$$

2. Share 5.2 in 4 equal groups.

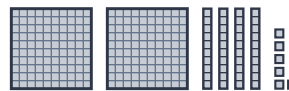


Trade 1 flat for 10 rods.



$$5.2 \div 4 = \underline{1.3}$$

3. Share 2.46 in 2 equal groups.



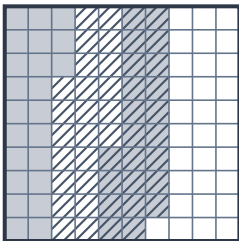
No trade needed.



$$2.46 \div 2 = \underline{1.23}$$

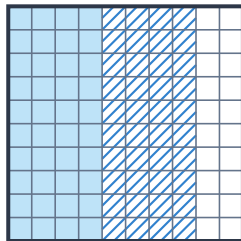
Shade the number. Split it into equal groups, a new color for each.

Example



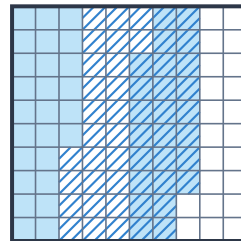
$$0.69 \div 3 = \underline{0.23}$$

4. One way



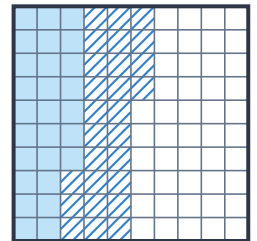
$$0.8 \div 2 = \underline{0.4}$$

5. One way



$$0.78 \div 3 = \underline{0.26}$$

6. One way



$$0.54 \div 2 = \underline{0.27}$$

Dividing Decimals

Estimate first. Then divide, putting the point straight up.

Estimate. Then divide. Put the point right above the point.

Example Estimate

$$16 \div 4 = 4$$

$$\begin{array}{r} 4.34 \\ 4 \overline{) 17.36} \\ \underline{- 16} \\ 13 \\ \underline{- 12} \\ 16 \\ \underline{- 16} \\ 0 \end{array}$$

1. Estimate One way

$$9 \div 3 = 3$$

$$\begin{array}{r} 2.84 \\ 3 \overline{) 8.52} \\ \underline{- 6} \\ 25 \\ \underline{- 24} \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$

2. Estimate One way

$$6 \div 3 = 2$$

$$\begin{array}{r} 2.08 \\ 3 \overline{) 6.24} \\ \underline{- 6} \\ 2 \\ \underline{- 0} \\ 24 \\ \underline{- 24} \\ 0 \end{array}$$

3. Estimate One way

$$4 \div 4 = 1$$

$$\begin{array}{r} 0.9 \\ 4 \overline{) 3.6} \\ \underline{- 36} \\ 0 \end{array}$$

4. Estimate One way

$$30 \div 6 = 5$$

$$\begin{array}{r} 4.9 \\ 6 \overline{) 29.4} \\ \underline{- 24} \\ 54 \\ \underline{- 54} \\ 0 \end{array}$$

5. Estimate One way

$$10 \div 5 = 2$$

$$\begin{array}{r} 2.33 \\ 5 \overline{) 11.65} \\ \underline{- 10} \\ 16 \\ \underline{- 15} \\ 15 \\ \underline{- 15} \\ 0 \end{array}$$

6. Estimate One way

$$42 \div 7 = 6$$

$$\begin{array}{r} 6.48 \\ 7 \overline{) 45.36} \\ \underline{- 42} \\ 33 \\ \underline{- 28} \\ 56 \\ \underline{- 56} \\ 0 \end{array}$$

7. Estimate One way

$$8 \div 8 = 1$$

$$\begin{array}{r} 0.84 \\ 8 \overline{) 6.72} \\ \underline{- 64} \\ 32 \\ \underline{- 32} \\ 0 \end{array}$$

The digits of each quotient are given. Estimate to place the point.

Problem	Estimate One way	Digits	Quotient
Example $31.2 \div 4$	$32 \div 4 = 8$	78	7.8
8. $9.81 \div 3$	$9 \div 3 = 3$	327	3.27
9. $86.5 \div 5$	$85 \div 5 = 17$	173	17.3
10. $5.88 \div 6$	$6 \div 6 = 1$	98	0.98

Dividing Decimals

Divide by 2-digit numbers. Write zeros to keep dividing.

Estimate. Then divide by the 2-digit number.

Example Estimate

$$36 \div 12 = 3$$

$$\begin{array}{r} 3.2 \\ 12 \overline{) 38.4} \\ \underline{- 36} \\ 24 \\ \underline{- 24} \\ 0 \end{array}$$

1. Estimate **One way**

$$96 \div 24 = 4$$

$$\begin{array}{r} 3.88 \\ 24 \overline{) 93.12} \\ \underline{- 72} \\ 211 \\ \underline{- 192} \\ 192 \\ \underline{- 192} \\ 0 \end{array}$$

2. Estimate **One way**

$$50 \div 25 = 2$$

$$\begin{array}{r} 2.47 \\ 25 \overline{) 61.75} \\ \underline{- 50} \\ 117 \\ \underline{- 100} \\ 175 \\ \underline{- 175} \\ 0 \end{array}$$

3. Estimate **One way**

$$480 \div 32 = 15$$

$$\begin{array}{r} 15.2 \\ 32 \overline{) 486.4} \\ \underline{- 32} \\ 166 \\ \underline{- 160} \\ 64 \\ \underline{- 64} \\ 0 \end{array}$$

Write a point and zeros after the number. Keep dividing to the end.

Example Estimate

$$48 \div 24 = 2$$

$$\begin{array}{r} 2.25 \\ 24 \overline{) 54.00} \\ \underline{- 48} \\ 60 \\ \underline{- 48} \\ 120 \\ \underline{- 120} \\ 0 \end{array}$$

4. Estimate **One way**

$$72 \div 36 = 2$$

$$\begin{array}{r} 1.75 \\ 36 \overline{) 63.00} \\ \underline{- 36} \\ 270 \\ \underline{- 252} \\ 180 \\ \underline{- 180} \\ 0 \end{array}$$

5. Estimate **One way**

$$225 \div 15 = 15$$

$$\begin{array}{r} 14.8 \\ 15 \overline{) 222.0} \\ \underline{- 15} \\ 72 \\ \underline{- 60} \\ 120 \\ \underline{- 120} \\ 0 \end{array}$$

6. Estimate **One way**

$$96 \div 16 = 6$$

$$\begin{array}{r} 5.75 \\ 16 \overline{) 92.00} \\ \underline{- 80} \\ 120 \\ \underline{- 112} \\ 80 \\ \underline{- 80} \\ 0 \end{array}$$

Is the point in the right place? Estimate to check. Fix it if not.

7. $7.56 \div 18 = 4.2$

Right? Yes **No**

If not, fix it: 0.42

8. $40.8 \div 24 = 1.7$

Right? **Yes** No

If not, fix it: _____

9. $275.2 \div 32 = 86$

Right? Yes **No**

If not, fix it: 8.6

Dividing Decimals

Divide by a decimal: how many tenths or hundredths fit?

Each strip is 1 whole. Draw jumps of the divisor. How many fit?

Example

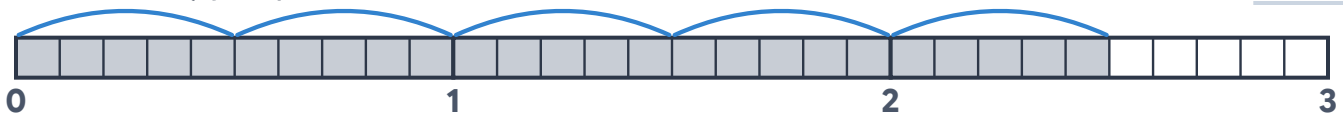
How many jumps of 0.3 make 2.4?

$$2.4 \div 0.3 = \underline{8}$$



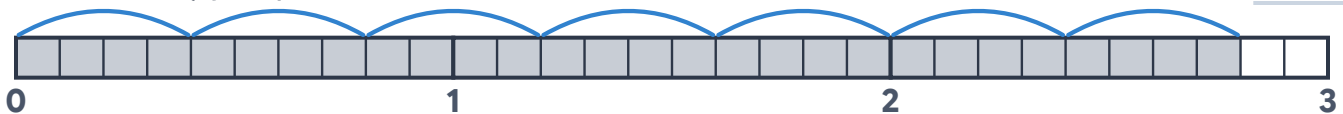
1. How many jumps of 0.5 make 2.5?

$$2.5 \div 0.5 = \underline{5}$$



2. How many jumps of 0.4 make 2.8?

$$2.8 \div 0.4 = \underline{7}$$



Count both numbers in tenths or both in hundredths. Then divide.

Problem	Count in	Divide the counts	Answer
Example $1.5 \div 0.05$	tenths <u>hundredths</u>	<u>150</u> $\div$ <u>5</u>	<u>30</u>
3. $4.2 \div 0.7$ <i>One way</i>	<u>tenths</u> hundredths	<u>42</u> $\div$ <u>7</u>	<u>6</u>
4. $0.96 \div 0.12$	tenths <u>hundredths</u>	<u>96</u> $\div$ <u>12</u>	<u>8</u>
5. $2 \div 0.04$	tenths <u>hundredths</u>	<u>200</u> $\div$ <u>4</u>	<u>50</u>

Times 0.1 is the same as $\div 10$. Divided by 0.1 is the same as $\times 10$.

Example

$$46 \times 0.1 = 46 \div 10 = \underline{4.6} \quad 0.3 \div 0.01 = 0.3 \times 100 = \underline{30}$$

$$6. \quad 3.9 \times 0.1 = 3.9 \div 10 = \underline{0.39}$$

$$7. \quad 7.3 \div 0.1 = 7.3 \times 10 = \underline{73}$$

$$8. \quad 64 \times 0.01 = 64 \div 100 = \underline{0.64}$$

$$9. \quad 1.7 \div 0.01 = 1.7 \times 100 = \underline{170}$$

$$10. \quad 0.58 \div 0.1 = 0.58 \times 10 = \underline{5.8}$$

$$11. \quad 815 \times 0.01 = 815 \div 100 = \underline{8.15}$$

Dividing Decimals

Estimate first. Then solve, and find the better buy.

Estimate first. Then solve. Show your work.

Example 3 friends share a pizza that costs \$14.85. Each pays the same. How much does each friend pay?

Estimate: $\underline{\$15 \div 3 = \$5}$

$$\$14.85 \div 3 = \$4.95$$

Answer: \$ 4.95

1. A tank holds 52.8 L of water. It is poured equally into 16 jugs. How much water is in each jug?

One way

Estimate: $\underline{48 \div 16 = 3}$

$$52.8 \div 16 = 3.3$$

Answer: 3.3 L

2. 4 friends spend \$38.60 on tickets and \$6 on snacks. They share the cost equally. How much does each pay?

One way

Estimate: $\underline{(\$38 + \$6) \div 4 = \$11}$

$$\$38.60 + \$6.00 = \$44.60$$

$$\$44.60 \div 4 = \$11.15$$

Answer: \$ 11.15

3. Mia has 4.5 kg of trail mix. She fills bags that hold 0.25 kg each and gives 7 bags away. How many bags are left?

One way

Estimate: $\underline{(5 \div 0.25) - 7 = 13}$

$$4.5 \div 0.25 = 18$$

$$18 - 7 = 11$$

Answer: 11 bags

Find what one costs in each deal. Circle the better buy.

Item	Deal A	Deal B	One costs in A	One costs in B
Example Juice boxes	4 for \$3.80	<u>6 for \$5.10</u>	\$ <u>0.95</u>	\$ <u>0.85</u>
4. Granola bars	<u>5 for \$4.45</u>	8 for \$7.36	\$ <u>0.89</u>	\$ <u>0.92</u>
5. Tennis balls	3 for \$4.26	<u>12 for \$15.48</u>	\$ <u>1.42</u>	\$ <u>1.29</u>
6. Pencils	<u>10 for \$2.90</u>	24 for \$7.20	\$ <u>0.29</u>	\$ <u>0.30</u>