Name: _____ Date: _____

CHAPTER 3

Whole Number Multiplication and Division

Worksheet 1 Multiplying by a 1-Digit Number

Complete the multiplication by ones. Then regroup into tens and ones if possible.

Example

3 ones × 3 = 9 ones

1. 4 ones × 2 = _____ ones

2. 7 ones × 4 = 28 ones

= _____ tens _____ ones

3. 8 ones × 6 = _____ ones

= _____ tens _____ ones

Complete the multiplication by tens. Then regroup into hundreds and tens.

Example

7 tens × 4 = 28 tens

= 2 hundreds 8 tens

4. 4 tens × 5 = _____ tens

= _____ hundreds

5. 6 tens × 7 = _____ tens

= _____ hundreds _____ tens

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Complete the multiplication by hundreds. Then regroup into thousands and hundreds.

Example

2 hundreds × 9 = 18 hundreds

= 1 thousand 8 hundreds

6. 3 hundreds × 6 = _____ hundreds

= _____ thousand _____ hundreds

7. 7 hundreds × 4 = _____ hundreds

= _____ thousands _____ hundreds

8. 8 hundreds × 6 = _____ hundreds

= _____ thousands _____ hundreds

9. 5 hundreds × 8 = _____ hundreds

= _____ thousands

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Multiply and find the missing numbers.

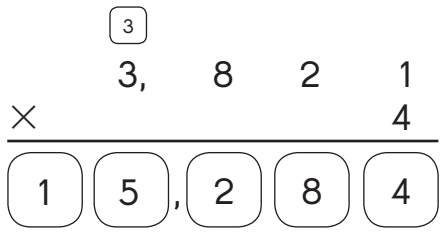
Example

3,821 × 4 = ?

Step 1

Multiply 1 one by 4.

1 one × 4 = 4 ones



Step 2

Multiply 2 tens by 4.

2 tens × 4 = 8 tens

Step 3

Multiply 8 hundreds by 4.

8 hundreds × 4 = 32 hundreds

= 3 thousands 2 hundreds

Step 4

Multiply 3 thousands by 4.

3 thousands × 4 = 12 thousands

Add the thousands.

12 thousands + 3 thousands = 15 thousands

So, 3,821 × 4 = 15,284.

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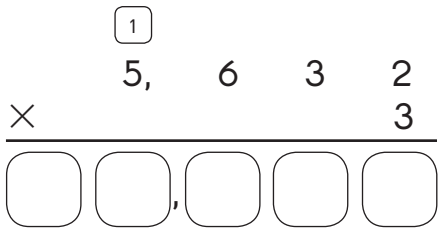
10. 5,632 × 3



Step 1

2 ones × 3 = _____ ones

Step 2

3 tens × 3 = _____ tens

Step 3

6 hundreds × 3 = _____ hundreds

= 1 thousand _____ hundreds

Step 4

5 thousands × 3 = 15 thousands

Add the thousands.

15 thousands + 1 thousand = _____ thousands

So, 5,632 × 3 = _____.

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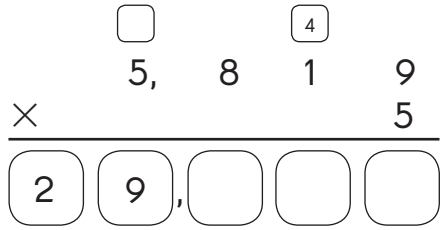
11. 5,819 × 5



Step 1

9 ones × 5 = 45 ones

= 4 tens _____ ones

Step 2

1 ten × 5 = _____ tens

Add the tens.

_____ tens + 4 tens = _____ tens

Step 3

8 hundreds × 5 = 40 hundreds

= _____ thousands

Step 4

5 thousands × 5 = _____ thousands

Add the thousands.

_____ thousands + _____ thousands = 29 thousands

So, 5,819 × 5 = _____.

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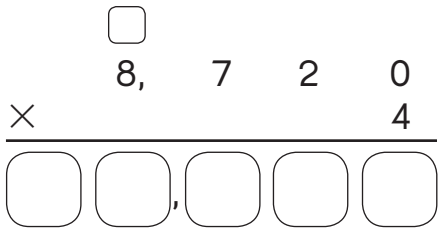
12. 8,720 × 4



Step 1

0 ones × 4 = _____ ones

Step 2

2 tens × 4 = _____ tens

Step 3

7 hundreds × 4 = _____ hundreds

= _____ thousands _____ hundreds

Step 4

8 thousands × 4 = _____ thousands

Add the thousands.

_____ thousands + _____ thousands = _____ thousands

So, 8,720 × 4 = _____.

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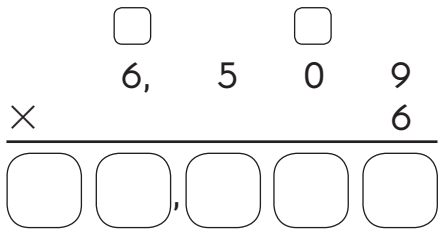
13. 6,509 × 6



Step 1

9 ones × 6 = _____ ones

= _____ tens _____ ones

Step 2

0 tens × 6 = _____ tens

Add the tens.

_____ tens + _____ tens = _____ tens

Step 3

5 hundreds × 6 = _____ hundreds

= _____ thousands

Step 4

6 thousands × 6 = _____ thousands

Add the thousands.

_____ thousands + _____ thousands = _____ thousands

So, 6,509 × 6 = _____.

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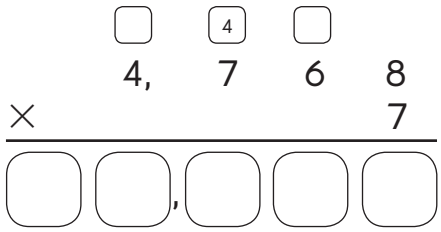
14. 4,768 × 7



Step 1

8 ones × 7 = _____ ones

= _____ tens _____ ones

Step 2

6 tens × 7 = _____ tens

Add the tens.

_____ tens + _____ tens

= _____ tens

= _____ hundreds _____ tens

Step 3

7 hundreds × 7 = _____ hundreds

Add the hundreds.

_____ hundreds + 4 hundreds

= _____ hundreds

= _____ thousands _____ hundreds

Step 4

4 thousands × 7 = _____ thousands

Add the thousands.

_____ thousands + _____ thousands = _____ thousands

So, 4,768 × 7 = _____.

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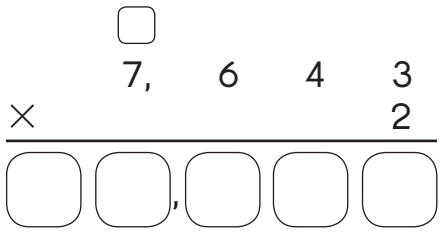
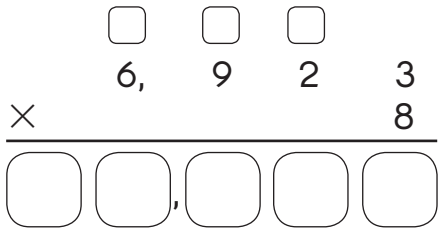
Multiply.

15. 7,643 × 2



16. 6,923 × 8



Multiply using the place value of each digit.

Example

8,153 × 4

1 2 → 3 × 4 = 12

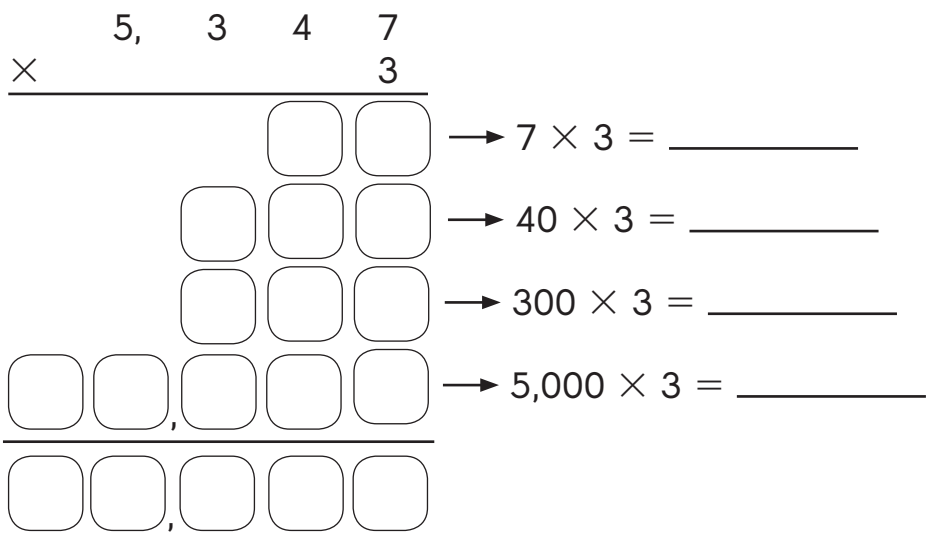
2 0 0 → 50 × 4 = 200

4 0 0 → 100 × 4 = 400

3 2,0 0 0 → 8,000 × 4 = 32,000

3 2,6 1 2

17. 5,347 × 3



→ 7 × 3 = _____

→ 40 × 3 = _____

→ 300 × 3 = _____

→ 5,000 × 3 = _____

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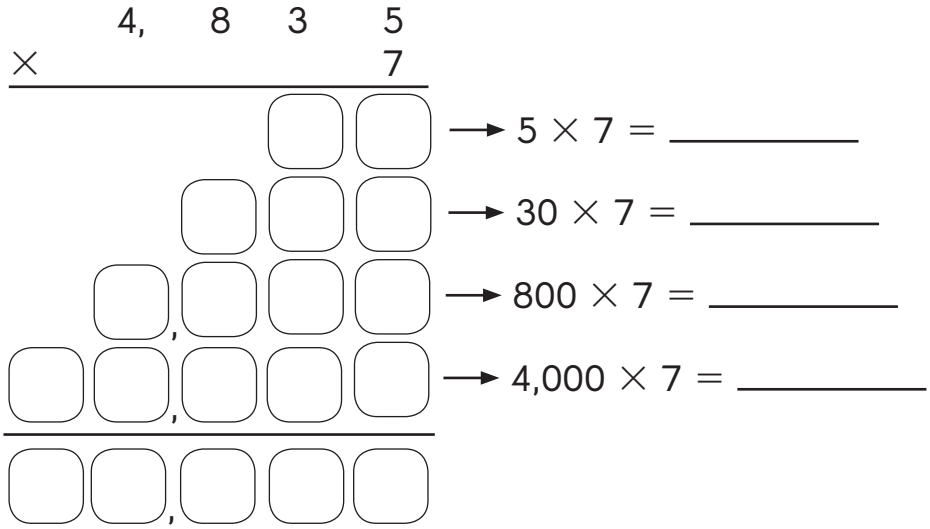
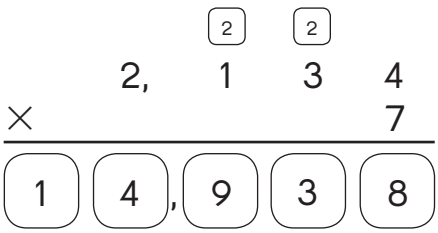
18.



Multiply.

Example



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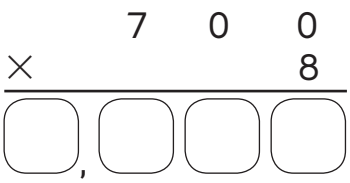

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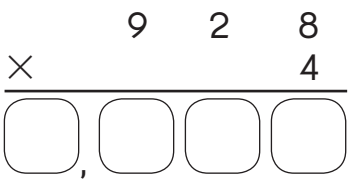

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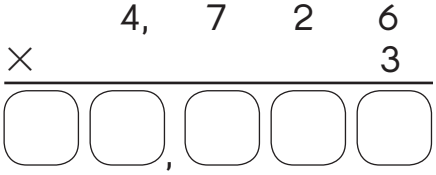

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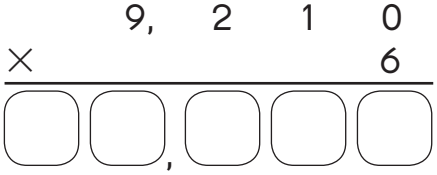

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Worksheet 2 Multiplying by a 2-Digit Number

Write the missing numbers.

Example

70 = 7 tens 9 tens = 90

1. 120 = _____ tens

2. 23 tens = _____

3. 800 = _____ hundreds

4. 6 hundreds = _____

5. 2,100 = _____ hundreds

6. 15 hundreds = _____

Multiply by tens.

Example

4 × 90 = ?

4 × 90 = 4 × 9 tens

= 36 tens

= 360

7. 6 × 80 = 6 × _____ tens

= _____ tens

= _____

8. 16 × 30 = 16 × _____ tens

= _____ tens

= _____

9. 21 × 5 tens = _____ tens = _____

10. 34 × 6 tens = _____ tens = _____

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Multiply by hundreds.

Example

6 × 4 hundreds = 24 hundreds = 2,400

11. 5 × 5 hundreds = _____ hundreds = _____

12. 11 × 300 = 11 × _____ hundreds

= _____ hundreds

= _____

Write the missing numbers.

Example

75 × 20 = 75 × 2 × 10

= 150 × 10

= 1,500

13. 6 × 70 = 6 × _____ × _____

= _____ × 10

= _____

14. 74 × 90 = _____ × _____ × _____

= _____ × _____

= _____

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Find each product.

Example

$12 \times 400 = ?$

Method 1

$12 \times 400 = 12 \times$ 4 $\times 100$

$= 48 \times 100$

$= 4{,}800$

Method 2

$12 \times 400 = 12 \times$ 100 $\times 4$

$= 1{,}200 \times 4$

$= 4{,}800$

15. $42 \times 200 =$ _____ $\times 100 \times$ _____

$=$ _____ $\times$ _____

$=$ _____

16. $973 \times 300 =$ _____ $\times 3 \times$ _____

$=$ _____ $\times$ _____

$=$ _____

Name: _____ **Date:** _____

Find each product.

Example

$34 \times 55 = ?$

Step 1

Multiply 3 tens 4 ones by 5.
4 ones $\times$ 5 = 20 ones = 2 tens
3 tens $\times$ 5 = 15 tens
2 tens + 15 tens = 17 tens
Part of the product: $34 \times 5 = 170$

$$\begin{array}{r} {\scriptstyle 2\ \ } \\ \mathbf{34} \\ \times\ \mathbf{5}5 \\ \hline 170 \end{array}$$

Step 2

Multiply 3 tens 4 ones by 50.
4 ones $\times$ 50 = 200 ones = 2 hundreds
3 tens $\times$ 50 = 150 tens = 15 hundreds
2 hundreds + 15 hundreds = 17 hundreds
Part of the product: $34 \times 50 = 1{,}700$

$$\begin{array}{r} {\scriptstyle 2\ \ } \\ \mathbf{34} \\ \times\ \mathbf{5}5 \\ \hline 170 \\ 1{,}700 \end{array}$$

Step 3

Add the two parts of the product.
$170 + 1{,}700 = 1{,}870$

$$\begin{array}{r} {\scriptstyle 2\ \ } \\ 34 \\ \times\ 55 \\ \hline 170 \\ 1{,}700 \\ \hline 1{,}870 \end{array}$$

17.

$$\begin{array}{r} 92 \\ \times\ 43 \\ \hline \square\square\square \\ \square\square\square\square \\ \hline \square\square\square\square \end{array}$$

18.

$$\begin{array}{r} 36 \\ \times\ 57 \\ \hline \square\square\square \\ \square\square\square\square \\ \hline \square\square\square\square \end{array}$$

Name: _____ **Date:** _____

Example

172 × 23 = ?

Step 1

Multiply 172 by 3.
172 × 3 = 516

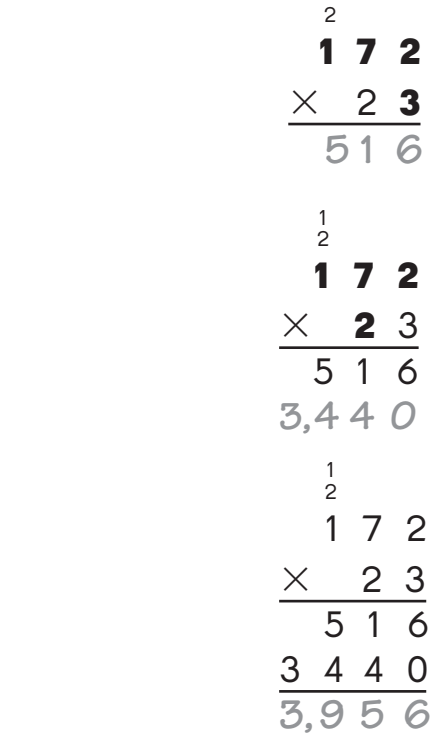
Step 2

Multiply 172 by 20.
172 × 20 = 3,440

Step 3

Add the two parts of the product.
516 + 3,440 = 3,956

So, 172 × 23 = 3,956.



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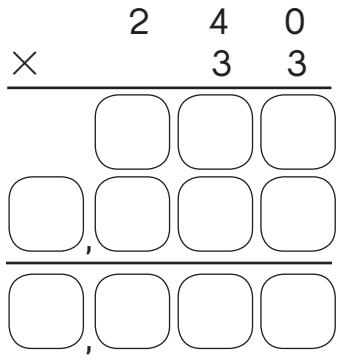

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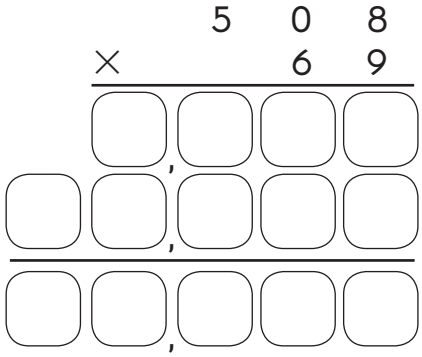

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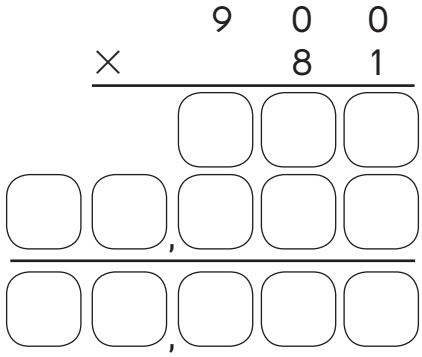

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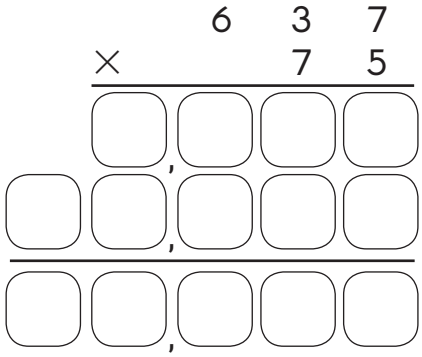

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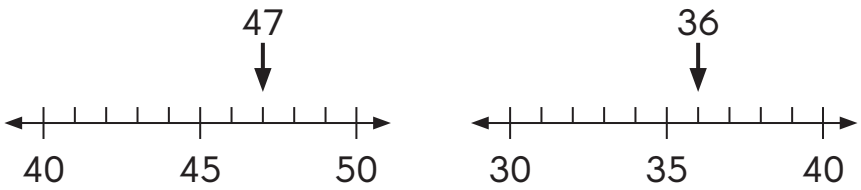
Use the number lines to round. Estimate each product.

Example

Estimate 47 × 36.



47 is closer to 50 than 40. 36 is closer to 40 than 30.

50 × 40 = 2,000

47 × 36 is about 2,000.

23. Estimate 68 × 52.

_____ × _____ = _____

68 × 52 is about _____.

24. Estimate 42 × 73.

_____ × _____ = _____

42 × 73 is about _____.

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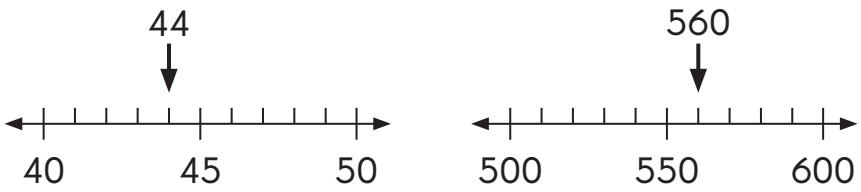
Use the number lines to round. Estimate each product.

Example

Estimate 44 × 560.



44 is closer to 40 than 50. 560 is closer to 600 than 500.

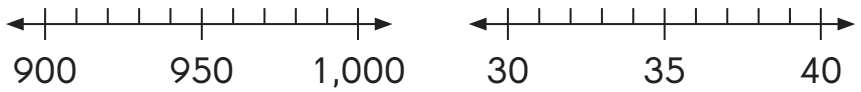
40 × 600 = 24,000

44 × 560 is about 24,000.

25. Estimate 239 × 77.

_____ × _____ = _____

239 × 77 is about _____.



26. Estimate 984 × 36.

_____ × _____ = _____

984 × 36 is about _____.

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Multiply. Then estimate to check whether your answer is reasonable.

Example

$38 \times 94 = ?$

$$\begin{array}{r} {\scriptstyle 7\ \ \ } \\ {\scriptstyle 3\ \ \ } \\ 38 \\ \times\ 94 \\ \hline 152 \\ 3,420 \\ \hline 3,572 \end{array}$$

38 is closer to 40 than to 30.

94 is closer to 90 than to 100.

38 × 94 is about 40 × 90

= 3,600

3,572 is close to 3,600. So, the answer is reasonable.

27. $58 \times 27 =$ _____

Estimate: _____ × _____ = _____

Is the answer reasonable? Explain.

_____

_____

$$\begin{array}{r} 58 \\ \times\ 27 \\ \hline \square\square\square \\ \square,\square\square\square \\ \hline \square,\square\square\square \end{array}$$

28. $63 \times 75 =$ _____

Estimate: _____ × _____ = _____

Is the answer reasonable? Explain.

_____

_____

$$\begin{array}{r} 63 \\ \times\ 75 \\ \hline \square\square\square \\ \square,\square\square\square \\ \hline \square,\square\square\square \end{array}$$

Name: _____ **Date:** _____

Multiply. Then estimate to check whether your answer is reasonable.

Example

$26 \times 246 = ?$

$$\begin{array}{r} {\scriptstyle 2}\,{\scriptstyle 1\,3} \\ 2\,4\,6 \\ \times\quad 2\,6 \\ \hline {\scriptstyle 1}\,\,1,\,4\,7\,6 \\ 4,\,9\,2\,0 \\ \hline 6,\,3\,9\,6 \end{array}$$

26 is closer to 30 than to 20.
246 is closer to 200 than to 300.

26×246 is about 30 $\times$ 200

$= 6{,}000$

6,396 is close to 6,000. So, the answer is reasonable.

29. $137 \times 34 =$ _____

$$\begin{array}{r} 1\quad 3\quad 7 \\ \times\qquad 3\quad 4 \\ \hline \square\,\square\,\square\,\square \\ \square\square,\square\,\square\,\square \\ \hline \square\square,\square\,\square\,\square \end{array}$$

Estimate: _____ $\times$ _____ $=$ _____

The answer is _____.

30. $760 \times 83 =$ _____

$$\begin{array}{r} 7\quad 6\quad 0 \\ \times\qquad 8\quad 3 \\ \hline \square\,\square\,\square\,\square \\ \square\square,\square\,\square\,\square \\ \hline \square\square,\square\,\square\,\square \end{array}$$

Estimate: _____ $\times$ _____ $=$ _____

The answer is _____.

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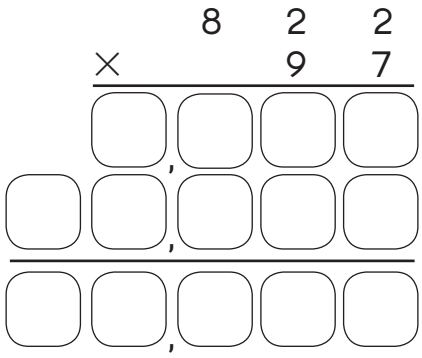
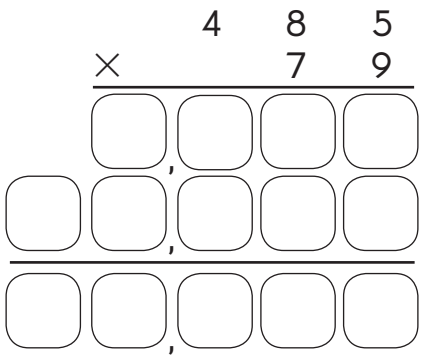
31. $822 \times 97 =$ _____



Estimate: _____ × _____ = _____

The answer is _____.

32. $485 \times 79 =$ _____



Estimate: _____ × _____ = _____

The answer is _____.

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Worksheet 3 Modeling Division with Regrouping

Complete the division steps.

Example

468 ÷ 3 = ?

```
  1
3)4 6 8
  3 0 0
  1
```

Step 1

Divide the hundreds by 3.
4 hundreds ÷ 3 = 1 hundred with 1 hundred left over

```
  1
3)4 6 8
  3 0 0
  1 6 8
```

Regroup the hundreds.
1 hundred = 10 tens

Add the tens.
10 tens + 6 tens = 16 tens

```
  1 5
3)4 6 8
  3 0 0
  1 6 8
  1 5 0
    1 8
```

Step 2

Divide the tens by 3.
16 tens ÷ 3 = 5 tens with 1 ten left over

Regroup the tens.
1 ten = 10 ones

Add the ones.
10 ones + 8 ones = 18 ones

```
  1 5 6
3)4 6 8
  3 0 0
  1 6 8
  1 5 0
    1 8
    1 8
      0
```

Step 3

Divide the ones by 3.
18 ones ÷ 3 = 6 ones

So, 468 ÷ 3 = 156.

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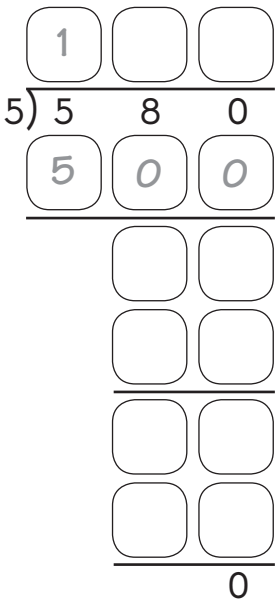
1. 580 ÷ 5



Step 1

5 hundreds ÷ 5 = 1 hundred

Step 2

_____ tens ÷ 5

= _____ ten with _____ tens left over

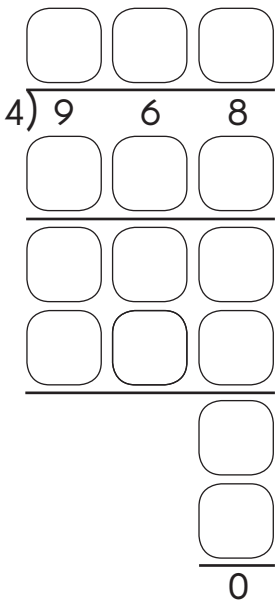
Regroup the tens.

_____ tens = _____ ones

Step 3

_____ ones ÷ 5 = _____ ones

2. 968 ÷ 4



Step 1

9 hundreds ÷ 4

= _____ hundreds with _____ hundred left over

Regroup the hundred.

_____ hundred = _____ tens

Add the tens.

_____ tens + 6 tens = _____ tens

Step 2

_____ tens ÷ 4 = _____ tens

Step 3

8 ones ÷ 4 = _____ ones

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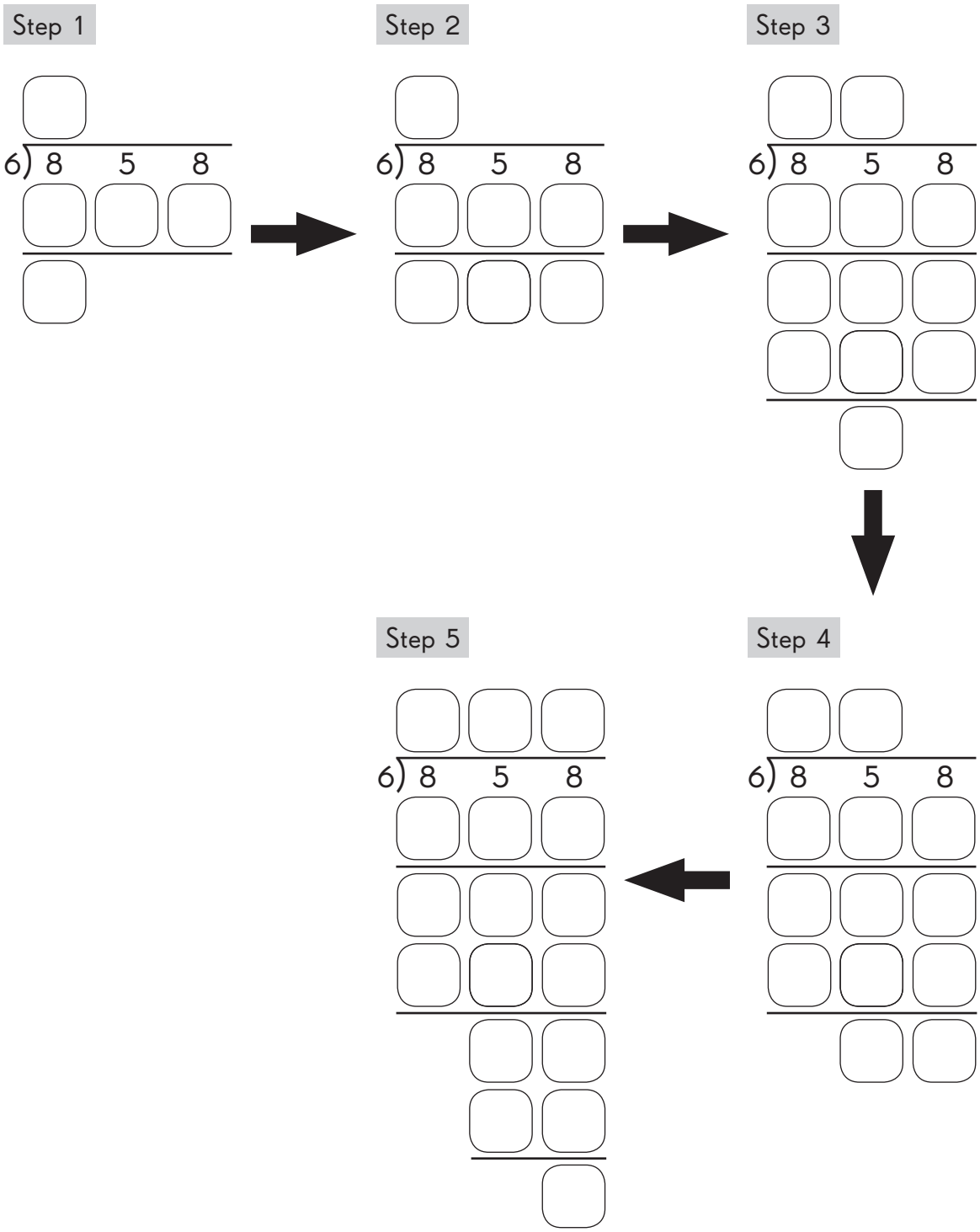
3. 858 ÷ 6

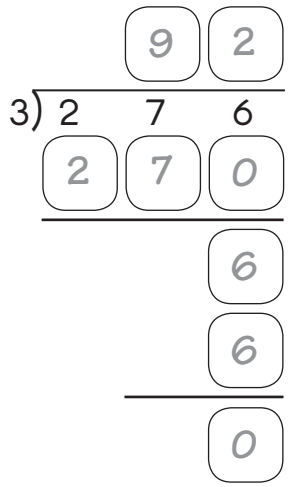


Name: _____ **Date:** _____

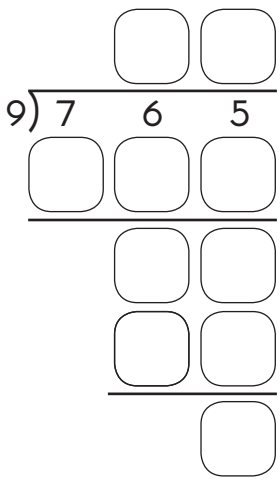
Divide. Write the missing numbers.

Example

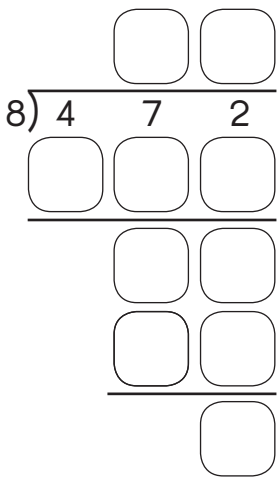
276 ÷ 3 = ?



4. 765 ÷ 9



5. 472 ÷ 8



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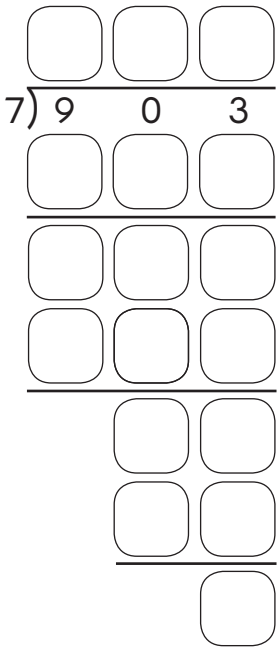
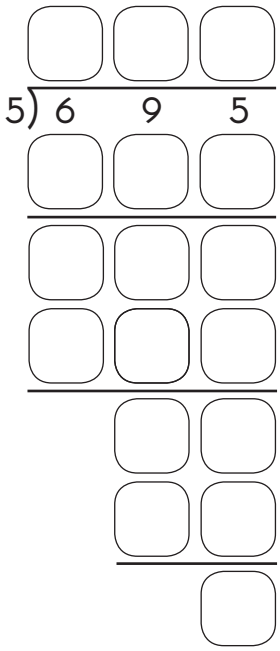
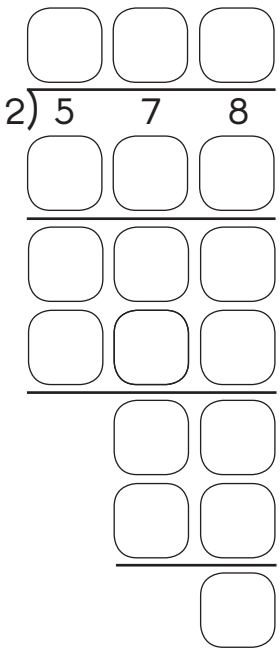
6. 903 ÷ 7



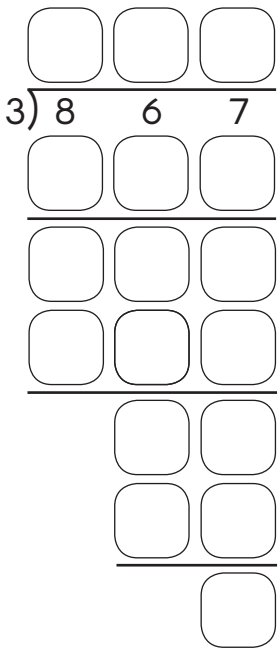
7. 695 ÷ 5



8. 578 ÷ 2

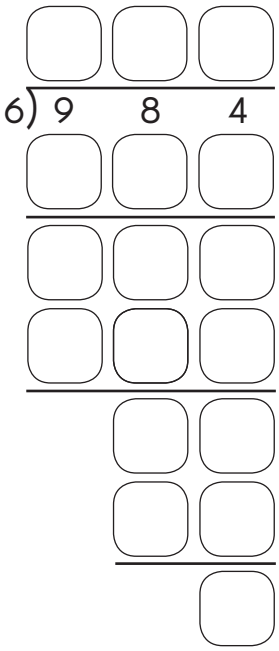


9. 867 ÷ 3

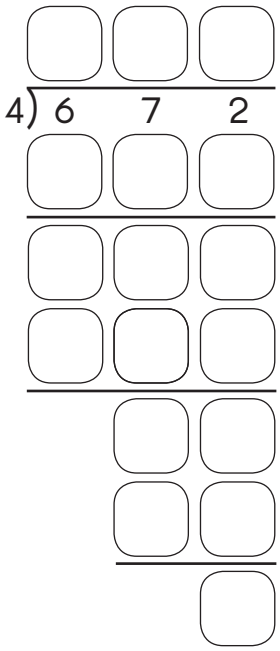


Name: _____ **Date:** _____

10. 984 ÷ 6



11. 672 ÷ 4



Name: _____ Date: _____

Worksheet 4 Dividing by a 1-Digit Number

Find each quotient.

Example

3,852 ÷ 3 = ?

Step 1

Divide 3 thousands by 3.
3 thousands ÷ 3 = 1 thousand
= 1,000

Step 2

Divide 8 hundreds by 3.
8 hundreds ÷ 3
= 2 hundreds with 2 hundreds left over
= 200 with 20 tens left over

Step 3

Divide 25 tens by 3.
25 tens ÷ 3
= 8 tens with 1 ten left over
= 80 with 10 ones left over

Step 4

Divide 12 ones by 3.
12 ones ÷ 3 = 4 ones

So, 3,852 ÷ 3 = 1,284.

```
   1
3)3,852
  3,000
```

```
   1,2
3)3,852
  3,000
    852
    600
      2
```

```
   1,28
3)3,852
  3,000
    852
    600
    252
    240
      1
```

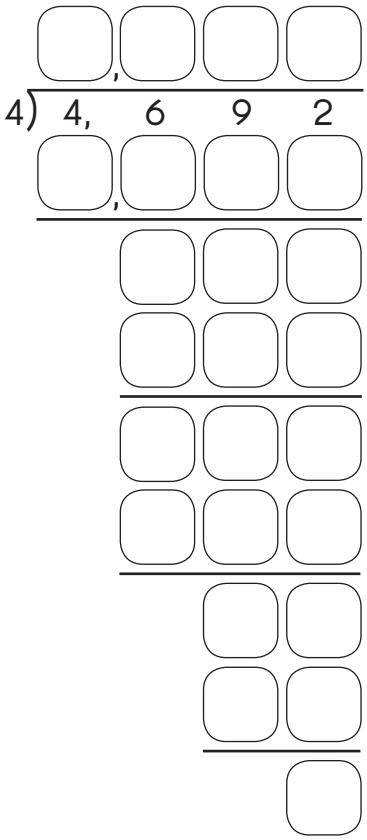
```
   1,284
3)3,852
  3,000
    852
    600
    252
    240
     12
     12
      0
```

A **quotient** is the answer to a division problem.

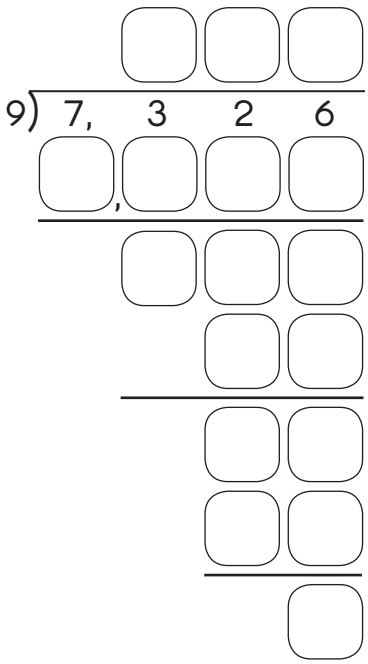
No remainder.

Name: _____ **Date:** _____

1. 4,692 ÷ 4



2. 7,326 ÷ 9

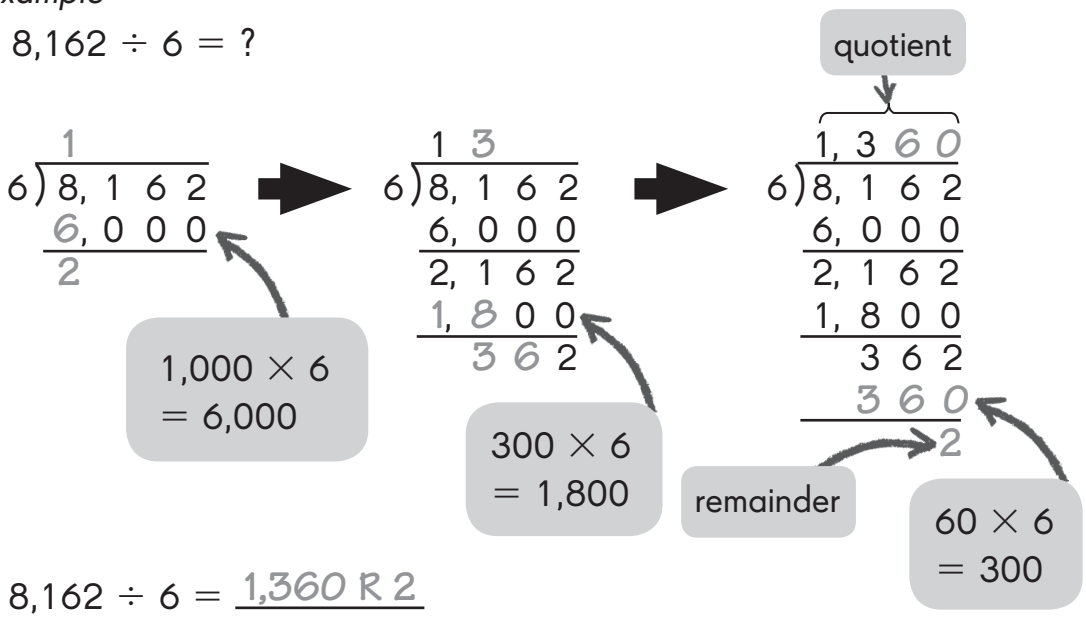


Name: _____ **Date:** _____

Find each quotient and remainder.

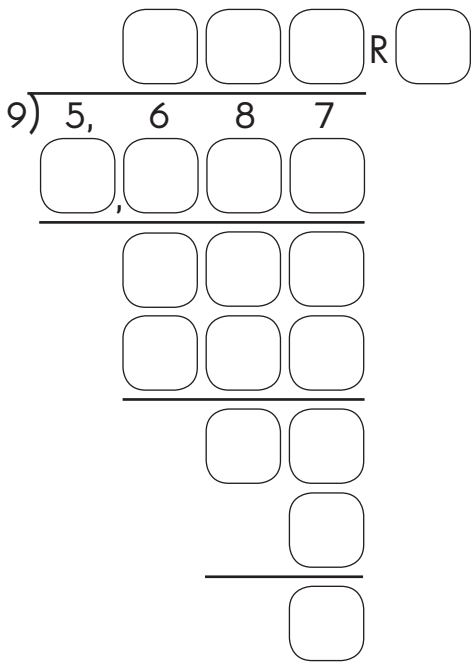
Example

8,162 ÷ 6 = ?

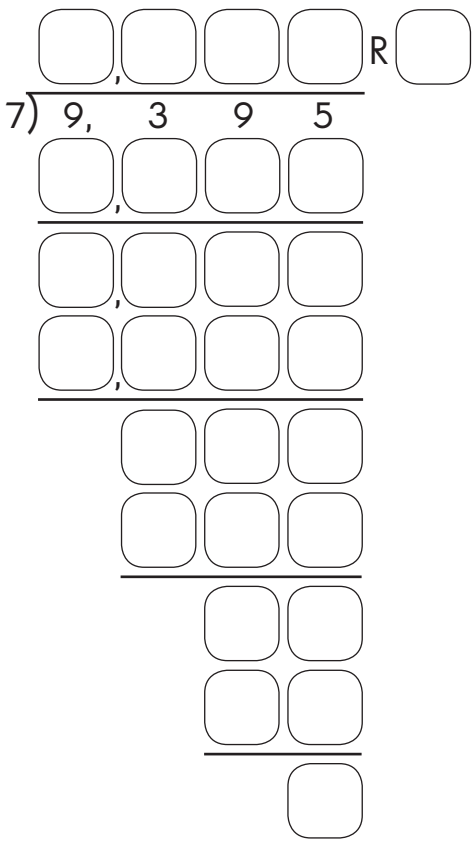


8,162 ÷ 6 = 1,360 R 2

3. 5,687 ÷ 9



4. 9,395 ÷ 7

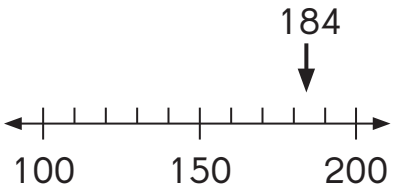


Name: _____ **Date:** _____

Estimate each quotient using related multiplication facts.

Example

184 ÷ 5 = ?



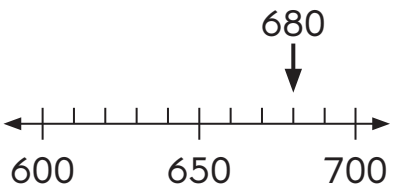
Related multiplication facts:

30 × 5 = 150 40 × 5 = 200

184 is closer to 200 than to 150.

So, 184 ÷ 5 is about 200 ÷ 5 = 40.

5. 680 ÷ 6



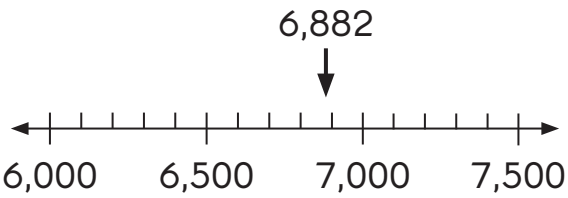
110 × 6 = _____ 120 × 6 = _____

680 is closer to _____ than to _____.

So, 680 ÷ 6 is about _____ ÷ 6 = _____.

Name: _____ **Date:** _____

6. 6,882 ÷ 8



_____ × _____ _____ × _____

= _____ = _____

6,882 is closer to _____ than to _____.

So, 6,882 ÷ 8 is about _____ ÷ 8 = _____.

Divide. Then estimate to check whether your answer is reasonable.

Example

4,156 ÷ 6 = ?

```
   6 9 2 R 4
6)4,1 5 6
  3,6 0 0
    5 5 6
    5 4 0
      1 6
      1 2
        4
```

Estimate:

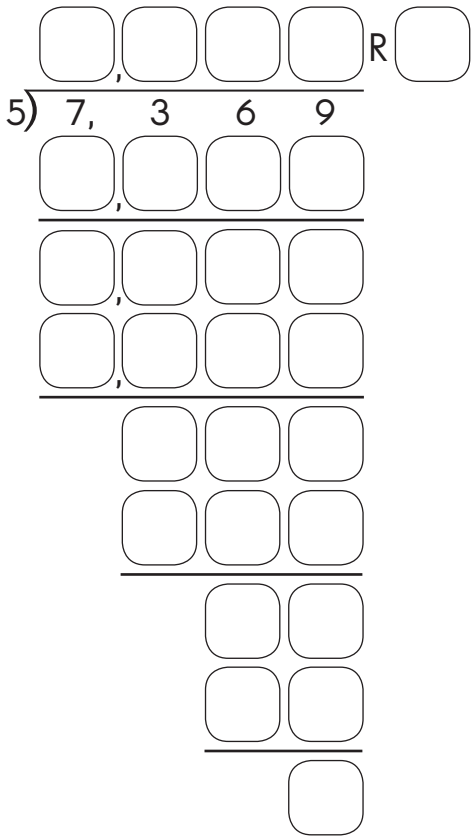
4,200 ÷ 6 = 700

4,156 ÷ 6 is about 700, so the answer is reasonable.

4,156 ÷ 6 = 692 R 4

Name: _____ **Date:** _____

7. 7,369 ÷ 5



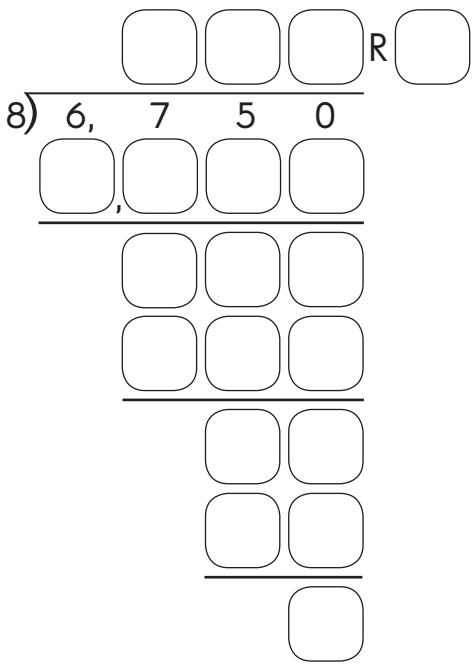
Estimate:

_____ ÷ 5 = _____

7,369 ÷ 5 is about _____, so

the answer is _____.

8. 6,750 ÷ 8



Estimate:

_____ ÷ 8 = _____

6,750 ÷ 8 is about _____, so

the answer is _____.

Name: _____ Date: _____

Worksheet 5 Real-World Problems: Multiplication and Division

Solve. Show your work.

Example

Mr. Jack pays $785 a month to rent an apartment.
Ms. Jill pays $1,075 a month to rent an apartment.
How much rent do they pay in 12 months?

Step 1 $785 + $1,075 = $1,860

Step 2 12 × $1,860 = $22,320

They pay $22,320 in 12 months.

1. Amos packs 298 boxes of pears each day.
Kim packs 509 boxes each day.
How many boxes of pears do they pack in 21 days?

Step 1

How many boxes of pears do they pack each day?

_____ + _____ = _____

Step 2

How many boxes of pears do they pack in 21 days?

_____ × 21 = _____

They pack _____ boxes of pears in 21 days.

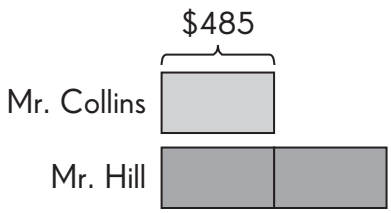
Name: _____ **Date:** _____

Solve each problem using models.

Example

Mr. Collins saves $485 a month.
Mr. Hill saves twice as much as Mr. Collins.
How much do they save in 12 months?

Step 1 How much does Mr. Hill save?



Mr. Hill saves $485 × 2 = $970 a month.

Step 2 How much do they save in a month?

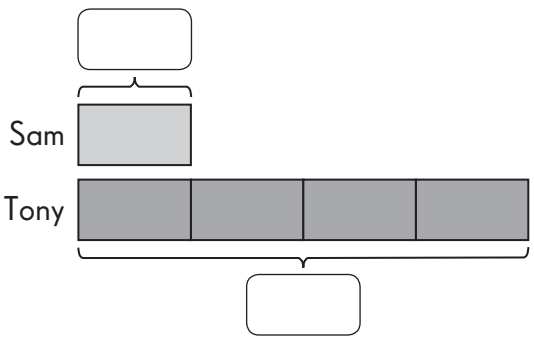
$485 + $970 = $1,455

Step 3 How much do they save in 12 months?

$1,455 × 12 = $17,460

2. Sam has 215 marbles. Tony has 4 times as many marbles as Sam.

Complete the model. Write the missing numbers.



Name: _____ **Date:** _____

a. How many marbles does Tony have?

1 unit → _____

4 units → _____ × 4 = _____

Tony has _____ marbles.

b. Tony packs the marbles into boxes of 9 marbles each. How many full boxes does he have?

_____ ÷ 9 = _____ R ____

He has _____ full boxes.

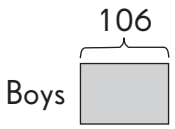
c. How many marbles are not packed in a full box?

____ marbles are not packed in a full box.

Name: _____ **Date:** _____

3. A school has 106 boys. There are 12 more girls than boys in the school.

Complete the model to show the number of girls.



a. How many students are there in the school?

There are _____ students in the school.

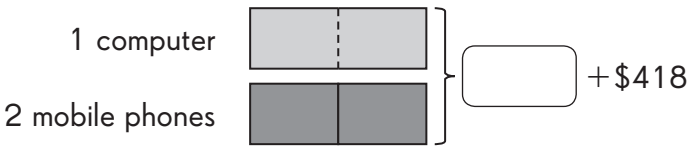
b. The school puts the children equally into 8 classes.
How many students are there in each class?

There are _____ students in each class.

Name: _____ **Date:** _____

4. Mr. Roberts has $782 to buy one computer and 2 mobile phones.
A computer costs twice as much as one mobile phone.
He needs $418 more to buy all the items.

Complete the model. Write the missing numbers.



a. What is the total cost of all the items?

The total cost of all the items is _____.

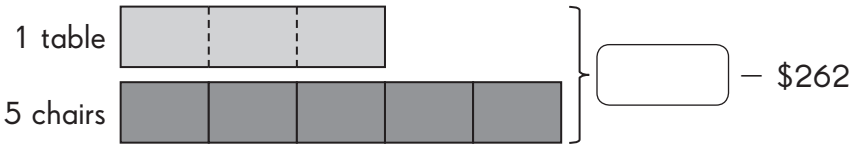
b. How much does the computer cost?

The computer costs _____.

Name: _____ **Date:** _____

5. Ms. Leslie has $2,750 to spend on a table and 5 chairs. The table costs 3 times as much as one chair. After buying all the items she has $262 left.

Complete the model. Write the missing numbers.



a. What is the total cost of all the items?

The total cost is _____.

b. What is the cost of the 5 chairs?

The 5 chairs cost _____.

Name: _____ **Date:** _____

6. Sally sold twice as many boxes of chocolate cookies as Tina. Tina sold 78 boxes. Each box contains 12 packets of cookies.

a. How many packets of chocolate cookies did Tina sell?

There are _____ boxes of chocolate cookies.

There are _____ packets in each box.

_____ boxes × _____ packets = _____

Tina sold _____ packets of chocolate cookies.

b. How many packets of chocolate cookies does Sally have?

Sally sold twice as many packets as Tina.

So, 2 × _____ = _____

Sally sold _____ packets of chocolate cookies.

7. Jeff buys three times as many cartons of eggs as Andrew. Each carton has 12 eggs. Jeff has 25 cartons of eggs.

a. How many eggs does Jeff buy?

There are _____ cartons of eggs.

There are _____ eggs in each carton.

_____ cartons × _____ eggs = _____

Jeff buys _____ eggs.

b. How many eggs does Andrew buy?

Jeff buys 3 times as many as Andrew.

So, _____ ÷ _____ = _____

Andrew buys _____ eggs.

Name: _____ **Date:** _____

8. Sam packs twice as many boxes of presents as Lee. Each box contains 16 small packets of presents. Lee packs 69 boxes of presents altogether.

a. How many packets of presents does Lee pack altogether?

b. How many packets of presents does Sam pack altogether?

9. Klio packs her photos into boxes. She packs 5 times as many boxes as her brother Jack. Each box can contain 32 photos. Klio has 15 boxes in all.

a. How many photos does Klio pack altogether?

b. How many photos does Jack pack altogether?