Teacher Packet

Grade 4 Mathematics

Teacher At-Home Activity Packet

The At-Home Activity Packet includes 23 sets of practice problems that align to important math concepts that have likely been taught this year.

Since pace varies from classroom to classroom, feel free to select the pages that align with the topics your students have covered.

The At-Home Activity Packet includes instructions to the parent and can be printed and sent home.

This At-Home Activity Packet—Teacher Guide includes all the same practice sets as the Student version with the answers provided for your reference.

See the Grade 4 Math concepts covered in this packet!



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Grade 4 Math concepts covered in this packet

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Set A

1 Write the number 78,215 in the place-value chart.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
	7	8	2	1	5

Write 78,215 in expanded form and word form.

70,000 + 8,000 + 200 + 10 + 5; seventy-eight thousand, two hundred fifteen

2 Write the number 540,632 in the place-value chart.

Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
5	4	0	6	3	2

Write 540,632 in expanded form and word form.

500,000 + 40,000 + 600 + 30 + 2; five hundred forty thousand, six hundred thirty-two

Set B

3 Show different ways to make 25,302.

25 thousands + 3 hundreds + 2 ones

253 hundreds + 2 ones

25,302 ones

4 Show different ways to make 708,496.

7 hundred thousands + 8 thousands + 4 hundreds + 9 tens + 6 ones

708 thousands + 4 hundreds + 9 tens + 6 ones

7,084 hundreds + 9 tens + 6 ones

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Set B *continued*

5 Show different ways to make 492,623.

49 ten thousands + **2** thousands + **6** hundreds + **2** tens + **3** ones

492 thousands + **62** tens + **3** ones

4,926 hundreds + **23** ones

6 Write 841,620 in three different ways.

Answers will vary. Possible answer: 800,000 + 40,000 + 1,000 + 600 + 20; 841 thousands + 620 ones; eight hundred forty-one thousand, six hundred twenty

7 Why do both of these show 27,974?

20,000 + 7,000 + 900 + 70 + 4

27 thousands + 97 tens + 4 ones

Answers will vary. Possible answer: If you add the expanded form, it has a sum of 27,974. If you add 27,000 + 970 + 4, it also has a sum of 27,794.

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Set A

Write the symbol that makes each statement true. Use >, <, or =.

1 23,230 ___>___ 2,323 **2** 33,003 ___<___ 33,030 **3** 9,999 ___<___ 10,000

4 40,404 ___>___ 40,040 **5** 52,177 ___<___ 52,771 **6** 421,073 ___>___ 412,730

Set B

7 Circle all the numbers that are less than 78,265.

(78,000) 79,000 (70,000) 80,000 (78,200) 78,300

8 Circle all the numbers that are less than 45,763.

46,000 (40,000) 50,000 (45,700) 45,800 (45,000)

9 Circle all the numbers that are greater than 108,427.

108,000 108,400 (108,500) (109,000) (108,430) 108,420

10 How did you solve problem 7?

Answers will vary.
Possible answer: I compared each number with 78,265. If the digits were the same in the ten-thousands place, I compared the digit to the right. I repeated this until I could tell if the number was less than 78,265.

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Round each number to the nearest ten.

1. 72 — 70
2. 172 — 170
3. 2,572 — 2,570
4. 101,372 — 101,370

Round each number to the nearest hundred.

5. 180 — 200
6. 1,180 — 1,200
7. 56,180 — 56,200

8. 980 — 1,000
9. 1,980 — 2,000
10. 56,980 — 57,000

Round each number to the nearest thousand.

11. 7,750 — 8,000
12. 17,750 — 18,000
13. 25,750 — 26,000
14. 70,750 — 71,000

Round each number to the nearest ten thousand.

15. 65,321 — 70,000
16. 165,321 — 170,000
17. 185,321 — 190,000
18. 205,321 — 210,000

19. Round 307,451 to each place value given below.

to the nearest thousand: 307,000

to the nearest hundred: 307,500

to the nearest ten: 307,450

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Using Strategies to Add

Add using different strategies.

1 4,000 + 6,215 = **10,215**

2 4,010 + 6,215 = **10,225**

3 4,121 + 6,215 = **10,336**

4 3,000 + 6,871 = **9,871**

5 2,999 + 6,871 = **9,870**

6 2,990 + 6,871 = **9,861**

7 5,020 + 1,491 = **6,511**

8 4,990 + 1,491 = **6,481**

9 4,950 + 1,491 = **6,441**

10 What strategies did you use to solve the problems? Explain.

Answers will vary. Possible answer: In problem 5, I needed to add 1 less than 3,000. So I added 3,000 and then subtracted 1.

11 Check your answer to problem 6 by solving it with a different strategy. Show your work.

Answers will vary.

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Using the Standard Algorithm to Add Greater Numbers

Teacher Packet

Estimate the sum of each addition problem to check if the student's answer is reasonable. If not, cross out the answer and write the correct answer.

Addition Problems	Student Answers	
8,997 + 2,301	~~31,998~~ 11,298	Estimate: 9,000 + 2,000 11,000
23,411 + 35,507	~~12,918~~ **58,918**	**Estimate: 23,000** **+ 36,000** **59,000**
72,418 + 41,291	*113,709*	**Estimate: 70,000** **+ 40,000** **110,000**
67,802 + 3,443	~~10,225~~ **71,245**	**Estimate: 68,000** **+ 3,000** **71,000**
5,188 + 9,024	~~6,112~~ **14,212**	**Estimate: 5,000** **+ 9,000** **14,000**

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Using the Standard Algorithm to Add Greater Numbers *continued*

Addition Problems	Student Answers	
21,822 + 75,333	*97,155*	**Estimate: 22,000** **+ 75,000** **97,000**
60,125 + 69,205	~~*75,330*~~ **129,330**	**Estimate: 60,000** **+ 69,000** **129,000**
4,899 5,224 + 9,296	~~*108,209*~~ **19,419**	**Estimate: 5,000** **5,000** **+ 9,000** **19,000**

1 How does estimating an addition problem help you know if an answer is reasonable?

Answers will vary. Possible answer: An estimate tells you an approximate answer. If your answer is very different from the estimate, then your answer may be incorrect.

2 Can an answer be incorrect even if it looks reasonable? Explain.

Answers will vary. Possible answer: Yes; it may be incorrect in the tens or ones place. The answer may be reasonable when compared with the estimate, but there may still be an addition error in one of the places.

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Using Strategies to Subtract

Subtract.

1

$$\begin{array}{r} 4{,}003 \\ -\ \ 3 \\ \hline \textbf{4,000} \end{array}$$

$$\begin{array}{r} 4{,}003 \\ -\ 13 \\ \hline \textbf{3,990} \end{array}$$

$$\begin{array}{r} 4{,}003 \\ -\ 103 \\ \hline \textbf{3,900} \end{array}$$

$$\begin{array}{r} 4{,}003 \\ -\ 1{,}103 \\ \hline \textbf{2,900} \end{array}$$

$$\begin{array}{r} 4{,}003 \\ -\ 2{,}103 \\ \hline \textbf{1,900} \end{array}$$

2

$$\begin{array}{r} 2{,}000 \\ -\ 1{,}999 \\ \hline \textbf{1} \end{array}$$

$$\begin{array}{r} 2{,}000 \\ -\ 1{,}990 \\ \hline \textbf{10} \end{array}$$

$$\begin{array}{r} 2{,}000 \\ -\ 1{,}985 \\ \hline \textbf{15} \end{array}$$

$$\begin{array}{r} 2{,}000 \\ -\ 1{,}500 \\ \hline \textbf{500} \end{array}$$

$$\begin{array}{r} 2{,}000 \\ -\ 1{,}490 \\ \hline \textbf{510} \end{array}$$

3

$$\begin{array}{r} 3{,}007 \\ -\ \ 7 \\ \hline \textbf{3,000} \end{array}$$

$$\begin{array}{r} 3{,}007 \\ -\ 27 \\ \hline \textbf{2,980} \end{array}$$

$$\begin{array}{r} 3{,}007 \\ -\ 307 \\ \hline \textbf{2,700} \end{array}$$

$$\begin{array}{r} 3{,}007 \\ -\ 1{,}307 \\ \hline \textbf{1,700} \end{array}$$

$$\begin{array}{r} 3{,}007 \\ -\ 2{,}307 \\ \hline \textbf{700} \end{array}$$

4 What strategy did you use to find the differences for problem 2? Explain.

Answers will vary. Possible answer: I added on to the number being subtracted to get to 2,000.

5 How could you check your answer to one of the problems using another strategy?

Answers will vary.

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Using the Standard Algorithm to Subtract Greater Numbers

Estimate. Circle all the problems with differences between 30,000 and 60,000. Then find the differences of only the circled problems.

1. 95,217 − 39,871 = **55,346**
2. 62,554 − 31,618 = **30,936**
3. 92,023 − 71,578
4. 84,724 − 43,951 = **40,773**
5. 56,417 − 24,009 = **32,408**
6. 71,677 − 13,197 = **58,480**
7. 99,902 − 33,227
8. 87,591 − 46,280 = **41,311**
9. 90,434 − 51,533 = **38,901**
10. 78,282 − 40,983 = **37,299**
11. 71,731 − 61,320
12. 50,118 − 18,306 = **31,812**
13. 86,496 − 54,101 = **32,395**
14. 59,176 − 17,222 = **41,954**
15. 89,971 − 11,499

16. Use estimation and addition to check one of your answers. Show your work.

Answers will vary.

17. How does checking with addition compare with checking using estimation?

Answers will vary. Possible answer: Addition takes longer, but will catch wrong answers that seem reasonable. Estimation only catches wrong answers that are unreasonable.

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Use a strategy of your choice to solve each problem.

1 The library has 5 mystery books on a shelf. It has 4 times as many fiction books on another shelf. How many fiction books are on the shelf?

There are 20 fiction books on the shelf.

2 Paul runs 2 laps around the gym. Carrie runs 6 times as many laps as Paul. How many laps does Carrie run?

Carrie runs 12 laps.

3 Violet has 3 markers. She has 6 times as many colored pencils as markers. How many colored pencils does she have?

Violet has 18 colored pencils.

4 Owen draws 7 comics in April. He draws 3 times as many comics in May. How many comics does Owen draw in May?

Owen draws 21 comics in May.

5 Tasha used 8 tomatoes to make salsa. She used 4 times as many tomatoes to make sauce. How many tomatoes did Tasha use to make sauce?

Tasha used 32 tomatoes to make sauce.

6 There are 7 pear trees on a farm. There are 7 times as many apple trees as pear trees. How many apple trees are on the farm?

There are 49 apple trees.

7 There are 9 school buses in the parking lot. There are 6 times as many cars as school buses in the parking lot. How many cars are in the parking lot?

There are 54 cars in the parking lot.

8 There are 8 vases at an art show. There are 9 times as many paintings as vases at the art show. How many paintings are at the art show?

There are 72 paintings at the art show.

9 Write and solve a word problem for this equation: $5 \times 6 = ?$

Answers will vary. Possible answer: There are 6 brown hens. There are 5 times as many white hens as brown hens. How many white hens are there? There are 30 white hens.

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Write an equation to represent each problem. Show your work. **Possible equations shown.**

1 The Lopez family goes to the movies. They buy 2 adult tickets for $6 each and 3 child tickets for $4 each. Write an equation to represent how much money the family spends on movie tickets, *t*.

$t = (2 \times 6) + (3 \times 4)$

2 Grace earns $5 each time she walks her neighbor's dog. She walks the dog 5 times in one week. Then she spends $7 on a book and $9 on a building set. Write an equation to represent how much money Grace has left, *m*.

$m = (5 \times 5) - (7 + 9)$

3 During the basketball game, Mika makes 3 baskets worth 2 points each, 2 baskets worth 3 points each, and 2 free throws worth 1 point each. Write an equation to represent how many points Mika scores, *p*.

$p = (3 \times 2) + (2 \times 3) + (2 \times 1)$

4 Will has 20 pounds of apples. He makes 2 batches of applesauce that use 4 pounds each, one batch of apple butter that uses 6 pounds, and he uses 3 pounds to make juice. Write an equation to represent how many pounds of apples Will has left, *p*.

$p = 20 - (2 \times 4) - 6 - 3$

5 What strategies did you use to write an equation?

Answers will vary. Possible answer: I drew bar models.

6 Is there another way you could write one of your equations? Could you write it as two equations? Explain.

Answers will vary.

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Write and solve an equation for each problem. Show your work. **Possible equations shown.**

1 Tasha spends 25 minutes reading on Wednesday night. She spends 17 more minutes reading on Thursday than she did on Wednesday. Write and solve an equation to find how many minutes Tasha spent reading on Wednesday and Thursday nights.

$r = 25 + (25 + 17)$
$r = 25 + 42$
$r = 67$

Tasha spent 67 minutes reading.

2 Erik has 2 bags of bird seed. One bag has 10 pounds of seed, and the other bag has 8 pounds of seed. He fills 7 bird feeders with 2 pounds each. Write and solve an equation to find how many pounds of bird seed are left.

$b = (10 + 8) - (7 \times 2)$
$b = 18 - 14$
$b = 4$

There are 4 pounds left.

3 There are 15 boys and 19 girls in math club. The tables in Mrs. Miller's classroom seat 4 students each. Write and solve an equation to find how many tables Mrs. Miller will need.

$t = (15 + 19) \div 4$
$t = 34 \div 4$
$34 \div 4 = 8$ R 2

Mrs. Miller will need 9 tables.

4 Frankie earns $5 each time he babysits his little sister. He has saved $30. Frankie wants to save $52 to buy a new skateboard. Write and solve an equation to find how many more times Frankie will need to babysit.

$b = (52 - 30) \div 5$
$b = 22 \div 5$
$22 \div 5 = 4$ R 2

Frankie will need to babysit 5 more times.

5 How can you estimate to check one of your answers? Show your work.

Answers will vary.

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Multiplying a Three-Digit Number by a One-Digit Number

Find the product.

1 $500 \times 4 =$ 2,000 $501 \times 4 =$ 2,004 $506 \times 4 =$ 2,024

2 $300 \times 2 =$ 600 $299 \times 2 =$ 598 $298 \times 2 =$ 596

3 $400 \times 3 =$ 1,200 $405 \times 3 =$ 1,215 $410 \times 3 =$ 1,230

4 $499 \times 6 =$ 2,994 5 $706 \times 3 =$ 2,118 6 $195 \times 5 =$ 975

7 What pattern do you notice in problem 2? How could it help you solve a problem such as 297×2?

Answers will vary. Possible answer: Each product is 2 less than the previous product. As one factor decreases by 1, the product decreases by 2×1, or 2. To find 297×2, you could multiply $300 \times 2 = 600$, then subtract 3×2 from the product. You subtract 3×2 because 297 is 3 less than 300.

8 Choose problem 4, 5, or 6. Explain how you could check your answer.

Answers will vary.

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Multiplying a Four-Digit Number by a One-Digit Number

Estimate. Circle all the problems that will have products between 18,000 and 32,000. Then find the exact products of only the problems you circled. Show your work.

1 8,491 × 2 = _____

2 6,148 × 4 = **24,592**

3 7,062 × 5 = _____

4 4,362 × 5 = **21,810**

5 1,789 × 8 = _____

6 2,206 × 9 = **19,854**

7 7,218 × 4 = **28,872**

8 9,821 × 3 = **29,463**

9 4,762 × 6 = **28,572**

10 6,739 × 6 = _____

11 7,964 × 4 = **31,856**

12 3,618 × 7 = **25,326**

13 What strategies did you use to solve the problems? Explain.

Answers will vary. Possible answer: I rounded the greater number to the nearest thousand to estimate the product. Then I used place value to multiply.

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Estimate each multiplication problem to check if the student's answer is reasonable. If not, cross out the answer and write the correct answer.

Multiplication Problems	Student Answers	
14 × 17	~~2,380~~ 238	Estimate: 14 × 20 = 280
15 × 19	285	**Estimate: 15 × 20 = 300**
21 × 18	~~3,078~~ **378**	**Estimate: 20 × 18 = 360**
16 × 13	~~28~~ **208**	**Estimate: 16 × 10 = 160**

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Multiplication Problems	Student Answers	
13 × 31	*403*	**Estimate: 13 × 30 = 390**
18 × 17	~~*3,056*~~ **306**	**Estimate: 20 × 20 = 400**
21 × 15	~~*3,015*~~ **315**	**Estimate: 20 × 15 = 300**
12 × 22	~~*2,604*~~ **264**	**Estimate: 12 × 20 = 240**

1 How does estimating a multiplication problem help you know if an answer is reasonable?

Answers will vary. Possible answer: If the answer is much greater or much less than the estimate, it tells you to check your work.

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Use a strategy of your choice to solve each problem.

1 There are 5 times as many tulips as rose bushes in a garden. There are 15 tulips. How many rose bushes are in the garden?

There are 3 rose bushes in the garden.

2 Kelly has 2 times as many quarters as dimes. She has 18 quarters. How many dimes does she have?

Kelly has 9 dimes.

3 There are 18 blueberries in a bowl. There are 3 times as many blueberries as strawberries in the bowl. How many strawberries are in the bowl?

There are 6 strawberries in the bowl.

4 Amanda swims for 16 minutes. This is 4 times as many minutes as Julio swims. How many minutes does Julio swim?

Julio swims 4 minutes.

5 A tile pattern has 6 times as many white squares as gray squares. There are 48 white tiles in the pattern. How many gray tiles are there?

There are 8 gray tiles in the pattern.

6 Leah has 3 times as many country songs as she has pop songs on her MP3 player. She has 27 country songs. How many pop songs does Leah have?

Leah has 9 pop songs.

7 Erik sees 42 stars in the sky on Tuesday night. This is 7 times as many stars as he sees on Monday night. How many stars does Erik see on Monday night?

Erik sees 6 stars on Monday night.

8 Lucas spends 72 minutes cleaning his room. This is 8 times as long as it takes him to wash the dishes. How long does it take Lucas to wash the dishes?

It takes Lucas 9 minutes to wash the dishes.

9 Write and solve a word problem for this equation: $6 \times n = 54$

Answers will vary. Possible answer: Maggie has 6 times as many unicorn stickers as robot stickers. She has 54 unicorn stickers. How many robot stickers does Maggie have? Maggie has 9 robot stickers.

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The answers to problems 1–12 are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

1 606 ÷ 2 = **303**

2 606 ÷ 3 = **202**

3 903 ÷ 3 = **301**

4 408 ÷ 8 = **51**

5 243 ÷ 3 = **81**

6 721 ÷ 7 = **103**

7 545 ÷ 5 = **109**

8 488 ÷ 8 = **61**

9 816 ÷ 4 = **204**

10 728 ÷ 8 = **91**

11 459 ÷ 9 = **51**

12 366 ÷ 6 = **61**

13 What strategies did you use to solve the problems?

Answers will vary. Possible answer: I used an area model strategy, breaking the problem apart into smaller parts and using repeated subtraction.

14 Explain how to use multiplication to check your answer to problem 10.

Possible answer: Multiply 90 × 8 = 720 and 8 × 1 = 8. Then add: 720 + 8 = 728

Answers

91	303	61	202	204	109
81	51	301	103	51	61

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Check the student's answer by multiplying the quotient by the divisor and adding the remainder. If an answer is incorrect, cross out the answer and write the correct quotient, including the remainder.

Division Problems	Student Answers	
637 ÷ 4	~~149 R 1~~ 159 R 1	Check: 149 × 4 = 596 596 + 1 = 597
139 ÷ 2	69 R 1	**Check: 69 × 2 = 138** **138 + 1 = 139**
188 ÷ 5	~~38 R 2~~ **37 R 3**	**Check: 38 × 5 = 190** **190 + 2 = 192**
344 ÷ 6	~~57 R 3~~ **57 R 2**	**Check: 57 × 6 = 342** **342 + 3 = 345**
458 ÷ 9	~~58 R 8~~ **50 R 8**	**Check: 58 × 8 = 464** **464 + 8 = 472**
222 ÷ 7	31 R 5	**Check: 31 × 7 = 217** **217 + 5 = 222**
692 ÷ 8	~~85 R 4~~ **86 R 4**	**Check: 85 × 8 = 680** **680 + 4 = 684**
479 ÷ 3	~~169 R 2~~ **159 R 2**	**Check: 169 × 3 = 507** **507 + 2 = 509**

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Dividing with Estimation and Area Models *continued*

1 Write a word problem that could be solved by one of the problems.

Answers will vary. Possible answer: Micah has 188 rocks in his collection. He displays an equal amount of rocks on each of 5 shelves. How many rocks are on each shelf? Are there any rocks left over?

2 Can an answer be incorrect even if it looks reasonable? Explain.

Answers will vary. Possible answer: Yes. In these problems, the incorrect answers were close to the correct answers. You had to multiply to check to know if an answer was incorrect.

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Estimate. Circle all the problems with quotients between 500 and 1,500. Then find the exact quotients of only the problems you circled.

1. 2,508 ÷ 4 = 627
2. 7,058 ÷ 9 = 784 R 2
3. 2,726 ÷ 9 = _____
4. 7,429 ÷ 5 = 1,485 R 4
5. 3,506 ÷ 9 = _____
6. 8,318 ÷ 8 = 1,039 R 6
7. 7,645 ÷ 2 = _____
8. 4,113 ÷ 4 = 1,028 R 1
9. 3,196 ÷ 5 = 639 R 1
10. 5,018 ÷ 7 = 716 R 6
11. 8,127 ÷ 6 = 1,354 R 3
12. 6,155 ÷ 3 = _____

13. What strategies did you use to estimate the quotients? Explain.

Answers will vary. Possible answer: I rounded each dividend to the nearest hundred. Then used basic facts and place value to estimate the quotient.

14. Check one of your answers by solving it with a different strategy. Show your work.

Answers will vary.

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Write the missing numbers in the boxes to make each equation true.

Possible answers are shown.

1 $\frac{2}{4} \times \frac{\boxed{4}}{\boxed{4}} = \frac{8}{16}$

2 $\frac{2}{3} \times \frac{\boxed{6}}{\boxed{6}} = \frac{12}{18}$

3 $\frac{5}{6} \times \frac{\boxed{5}}{\boxed{5}} = \frac{25}{30}$

4 $\frac{2}{3} \times \frac{\boxed{3}}{3} = \frac{6}{\boxed{9}}$

5 $\frac{3}{8} \times \frac{5}{\boxed{5}} = \frac{15}{\boxed{40}}$

6 $\frac{5}{6} \times \frac{\boxed{2}}{\boxed{2}} = \frac{\boxed{10}}{12}$

7 $\frac{5}{\boxed{8}} \times \frac{\boxed{3}}{\boxed{3}} = \frac{15}{24}$

8 $\frac{2}{\boxed{3}} \times \frac{4}{\boxed{4}} = \frac{\boxed{8}}{12}$

9 $\frac{\boxed{7}}{8} \times \frac{2}{\boxed{2}} = \frac{\boxed{14}}{16}$

10 Which strategies did you use to solve the problems? Explain why.

Answers will vary. Possible answer: I looked at the numbers I was given. If I knew two numbers for the numerators I could use multiplication facts to figure out the third number, or apply the same strategy to the denominators. Then, since the second fraction should have the same numerator and denominator, I can use that information to fill in the other boxes.

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Using Common Numerators and Denominators

Compare the fractions. Write <, >, or = .

1 $\frac{3}{4}$ > $\frac{3}{8}$

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

3 $\frac{1}{5}$ = $\frac{2}{10}$

4 $\frac{2}{10}$ < $\frac{23}{100}$

5 $\frac{7}{8}$ > $\frac{3}{4}$

6 $\frac{7}{12}$ < $\frac{5}{6}$

7 $\frac{10}{12}$ = $\frac{5}{6}$

8 $\frac{53}{100}$ > $\frac{1}{2}$

9 $\frac{2}{8}$ < $\frac{9}{12}$

10 $\frac{1}{6}$ < $\frac{3}{12}$

11 $\frac{4}{5}$ > $\frac{77}{100}$

12 $\frac{1}{3}$ < $\frac{5}{12}$

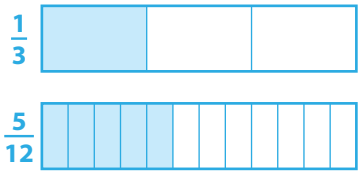
13 $\frac{1}{4}$ > $\frac{2}{12}$

14 $\frac{9}{10}$ = $\frac{90}{100}$

15 $\frac{2}{3}$ > $\frac{3}{6}$

16 Show a model you can use to check your answer to problem 12.

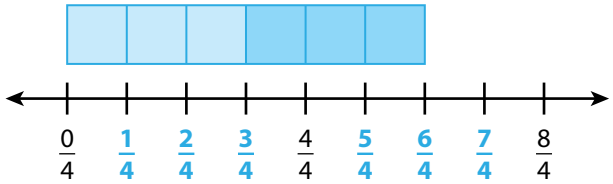
Answers will vary. Possible model:



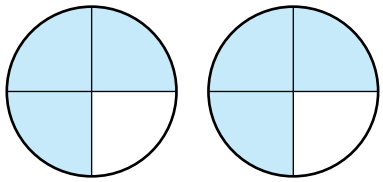
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Understanding of Fraction Addition and Subtraction

1 Label the number line and use it to show $\frac{3}{4} + \frac{3}{4}$.

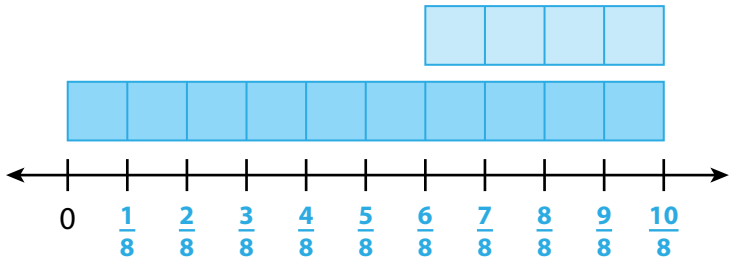


Shade the area model to show $\frac{3}{4} + \frac{3}{4}$. **Possible shading is shown.**

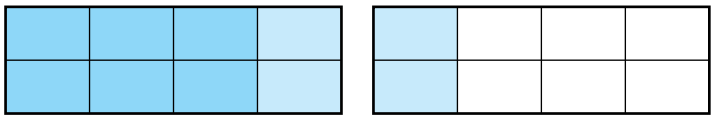


Write the sum. $\frac{3}{4} + \frac{3}{4} = \frac{6}{4}$

2 Label the number line and use it to show $\frac{10}{8} - \frac{4}{8}$.



Show $\frac{10}{8} - \frac{4}{8}$ on the area model. **Possible answer:**



Write the difference. $\frac{10}{8} - \frac{4}{8} = \frac{6}{8}$

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3 What type of model do you like best for showing fraction addition and subtraction? Explain why.

Answers will vary. Possible answer: I liked using area models when the fractions were small, but I thought it was easier to show numbers greater than 1 on a number line.

4 Compare subtracting $\frac{10}{8} - \frac{4}{8}$ to subtracting $10 - 4$. How are they alike? How are they different?

Possible answer: They are alike because you are subtracting 4 units from 10 units. But with $\frac{10}{8} - \frac{4}{8}$, the units are eighths, and with $10 - 4$, the units are wholes.

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Write the missing numbers in the boxes to make each addition problem true.

1 $\frac{1}{6} + \frac{4}{6} = \frac{\boxed{5}}{6}$

2 $\frac{1}{8} + \frac{4}{8} = \frac{\boxed{5}}{\boxed{8}}$

3 $\frac{1}{10} + \frac{4}{10} = \frac{\boxed{5}}{\boxed{10}}$

4 $\frac{4}{12} + \frac{\boxed{3}}{\boxed{12}} = \frac{7}{12}$

5 $\frac{4}{6} + \frac{\boxed{3}}{\boxed{6}} = \frac{7}{6}$

6 $\frac{4}{3} + \frac{\boxed{3}}{\boxed{3}} = \frac{7}{3}$

7 $\frac{\boxed{3}}{\boxed{4}} + \frac{2}{4} = \frac{5}{4}$

8 $\frac{\boxed{3}}{\boxed{10}} + \frac{2}{10} = \frac{5}{10}$

9 $\frac{\boxed{3}}{\boxed{8}} + \frac{2}{8} = \frac{5}{8}$

Answers will vary. Possible answers:

10 $\frac{\boxed{2}}{6} + \frac{2}{6} = \frac{\boxed{4}}{6}$

11 $\frac{\boxed{2}}{5} + \frac{1}{5} = \frac{\boxed{3}}{5}$

12 $\frac{4}{10} + \frac{\boxed{2}}{10} = \frac{\boxed{6}}{10}$

13 Write a number from 1–12 in each box so that the addition problem is true.

Answers will vary. Possible answer:

$\frac{\boxed{6}}{12} + \frac{5}{\boxed{12}} = \frac{\boxed{11}}{12}$

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Solve each problem.

1 Sammy has $\frac{4}{5}$ of his art project left to paint. He paints $\frac{2}{5}$ of the project. What fraction of the project is left to paint?

$\frac{2}{5}$ of the project

2 Marianne has $\frac{6}{8}$ of a yard of green ribbon. She uses $\frac{3}{8}$ of a yard for a craft project. How much green ribbon is left?

$\frac{3}{8}$ of a yard

3 Yuna plans to run 1 mile. She has run $\frac{7}{10}$ of a mile so far. What fraction of a mile does she have left to run?

$\frac{3}{10}$ of a mile

4 Alex and Brady are helping to pack books into a box. Together they pack $\frac{7}{12}$ of the books. Alex packs $\frac{4}{12}$ of the books. What fraction of the books does Brady pack?

$\frac{3}{12}$ of the books

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5 On Monday, Adam walks $\frac{3}{10}$ of a mile to the store and then $\frac{4}{10}$ of a mile to the park. How far does he walk in all?

$\frac{7}{10}$ of a mile

6 Javier has $\frac{7}{8}$ of a cup of flour. He uses $\frac{3}{8}$ of a cup in a recipe. How much flour does Javier have left?

$\frac{4}{8}$ of a cup

7 Shawna practices piano for $\frac{4}{6}$ of an hour and takes a break. Shawna then practices for $\frac{2}{6}$ of an hour more. How long does Shawna practice in all?

1 hour

8 Kailee has finished $\frac{4}{5}$ of her math homework so far. What fraction of her math homework does she have left to finish?

$\frac{1}{5}$ of her math homework

9 Explain one way to check your work to problem 2.

Answers will vary. Possible answer: I can add $\frac{3}{8} + \frac{3}{8}$ and check that the sum is equal to $\frac{6}{8}$.

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Find three ways to decompose each fraction into a sum of other fractions with the same denominator.

1 $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{\mathbf{1}}{\mathbf{4}}$

$\frac{3}{4} = \frac{2}{4} + \frac{\mathbf{1}}{\mathbf{4}}$

$\frac{3}{4} = \frac{1}{4} + \frac{\mathbf{2}}{\mathbf{4}}$

2 $\frac{7}{8} = \frac{6}{8} + \frac{\mathbf{1}}{\mathbf{8}}$

$\frac{7}{8} = \frac{5}{8} + \frac{\mathbf{2}}{\mathbf{8}}$

$\frac{7}{8} = \frac{4}{8} + \frac{\mathbf{3}}{\mathbf{8}}$

Answers will vary. Possible answers:

3 $\frac{6}{5} = \frac{\mathbf{3}}{\mathbf{5}} + \frac{3}{5}$

$\frac{6}{5} = \frac{2}{5} + \frac{\mathbf{2}}{\mathbf{5}} + \frac{\mathbf{2}}{\mathbf{5}}$

$\frac{6}{5} = \frac{2}{5} + \frac{2}{5} + \frac{\mathbf{1}}{\mathbf{5}} + \frac{\mathbf{1}}{\mathbf{5}}$

4 $\frac{5}{6} = \frac{\mathbf{2}}{\mathbf{6}} + \frac{3}{6}$

$\frac{5}{6} = \frac{1}{6} + \frac{\mathbf{2}}{\mathbf{6}} + \frac{\mathbf{2}}{\mathbf{6}}$

$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{\mathbf{1}}{\mathbf{6}} + \frac{\mathbf{1}}{\mathbf{6}} + \frac{\mathbf{1}}{\mathbf{6}}$

5 $\frac{9}{12} = \frac{\mathbf{4}}{\mathbf{12}} + \frac{5}{12}$

$\frac{9}{12} = \frac{3}{12} + \frac{3}{12} + \frac{\mathbf{1}}{\mathbf{12}} + \frac{\mathbf{1}}{\mathbf{12}} + \frac{\mathbf{1}}{\mathbf{12}}$

$\frac{9}{12} = \frac{\mathbf{3}}{\mathbf{12}} + \frac{\mathbf{3}}{\mathbf{12}} + \frac{\mathbf{3}}{\mathbf{12}}$

6 $\frac{8}{10} = \frac{\mathbf{4}}{\mathbf{10}} + \frac{4}{10}$

$\frac{8}{10} = \frac{2}{10} + \frac{3}{10} + \frac{\mathbf{1}}{\mathbf{10}} + \frac{\mathbf{1}}{\mathbf{10}} + \frac{\mathbf{1}}{\mathbf{10}}$

$\frac{8}{10} = \frac{\mathbf{3}}{\mathbf{10}} + \frac{\mathbf{3}}{\mathbf{10}} + \frac{\mathbf{2}}{\mathbf{10}}$

7 Describe your strategy for finding the missing numbers.

Possible answer: I thought about ways to make the numerator from smaller numbers. The denominator stays the same in each set of problems.

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