Name _____ Date _____

Master 3.28

Extra Practice 1

Lesson 1: Patterns in Multiplication and Division

1. How many days are in 9 weeks? _____
2. Write four related facts for each set of numbers:
   a) 8, 9, 72 _____
   b) 6, 8, 48 _____
3. How does knowing the product 7 × 8 = 56 help you find the product 7 × 9? _____
4. Find each product.
   a) 8 × 0 = _____ b) 5 × 5 = _____ c) 6 × 2 = _____
   d) 8 × 1 = _____ e) 7 × 4 = _____ f) 0 × 9 = _____
5. Find each quotient.
   a) 81 ÷ 9 = _____ b) 63 ÷ 7 = _____ c) 9 ÷ 1 = _____
   d) 8 ÷ 8 = _____ e) 0 ÷ 8 = _____ f) 72 ÷ 8 = _____
6. There are 8 markers in a package.
   There are 7 packages of markers.
   How many markers are there altogether? _____
7. There are 72 students who signed up for the sports club.
   There are 8 teams.
   The teams have equal numbers of students.
   How many students are on each team? _____
8. Write a multiplication fact that can help you find each quotient.
   a) 25 ÷ 5 = _____ b) 56 ÷ 8 = _____ c) 32 ÷ 4 = _____
9. Find each product and quotient.
   a) 64 ÷ 8 = _____ b) 5 × 6 = _____ c) 36 ÷ 6 = _____
   d) 9 × 5 = _____ e) 0 × 7 = _____ f) 0 ÷ 9 = _____

Name _____ Date _____

Master 3.29

Extra Practice 2

Lesson 2: Other Strategies for Multiplying and Dividing

1. Multiply.

   Then, double one factor and write a new multiplication fact.

   a) 2 × 7 = _____ b) 3 × 6 = _____ c) 4 × 8 = _____

2. Choose one multiplication fact from question 1.
   Draw an array to show the doubling.

3. Suppose you want to find 8 × 14.

   a) What multiplication fact could you use? _____

   b) What is the product of 8 × 14? _____

4. There are 36 students in the After Four club.

   a) How many teams of 4 can the students make? _____

   b) One-half of the students are in Grade 5.
   How many students are not in Grade 5? _____

   c) There are 6 different activities.
   There are equal numbers of students in the activities.
   How many students are there in each activity? _____

5. Alexis bought 8 movie tickets for $8 each.

   a) How much are the tickets? _____

   b) How could you use repeated doubling to find out? _____

6. How can you use 3 × 6 to find 6 × 6? _____

   _____

7. Divide.

   a) 64 ÷ 8 = _____ b) 40 ÷ 8 = _____ c) 72 ÷ 4 = _____

8. How can you divide by 2 to find 72 ÷ 8?
   Show all the steps.

Name _____ Date _____

Master 3.30

Extra Practice 3

Lesson 3: Multiplying with Multiples of 10

1. Multiply.
   a) 7 × 3 tens = __ tens; so 7 × 30 = _____
   b) 9 × 5 tens = __ tens; so 9 × 50 = _____
   c) 3 × 8 tens = __ tens; so 3 × 80 = _____
   d) 5 × 6 tens = __ tens; so 5 × 60 = _____
2. Multiply.
   a) 7 × 60 = _____ b) 9 × 80 = _____ c) 7 × 90 = _____
   d) 7 × 80 = _____ e) 7 × 800 = _____ f) 7 × 8000 = _____
3. Multiply.
   a) 30 × 40 = _____ b) 50 × 50 = _____ c) 60 × 70 = _____
   d) 3 × 800 = _____ e) 9 × 50 = _____ f) 6 × 7000 = _____
4. There are 100 cm in 1 m.
   A piece of fabric is 12 m long.
   How many centimetres is that? _____
5. How much money?
   a) Five $10 bills = _____ b) Thirteen $100 bills = _____
   c) Thirty $10 bills and forty $50 bills = _____
6. Why do you get 3 zeros in the product when you multiply 6 × 6000 and 4 zeros when you multiply 6 × 5000?
   _____
   _____
7. Rhianna puts eight $20 bills and fifteen $10 bills into a cash register.
   How much money did she put in the cash register? _____
8. The school wants to sell 1500 raffle tickets.
   Four hundred tickets are sold each week.
   Will 1500 tickets be sold in 4 weeks? Explain. _____
   _____

Name _____ Date _____

Master 3.31

Extra Practice 4

Lesson 4: Estimating Products to Solve Problems

1. Write the closest multiple of 10 for each number.

   a) 67 _____ b) 89 _____ c) 32 _____ d) 94 _____

2. Write the closest multiple of 100 for each number.

   a) 460 _____ b) 720 _____ c) 910 _____ d) 880 _____

3. Which compatible numbers would you use to estimate each product?

   a) 31 × 68 _____ b) 84 × 59 _____

4. Estimate to predict which products are greater than 3500.

   a) 72 × 52 _____ b) 66 × 37 _____

5. Estimate each product. Tell if your estimate is an overestimate, an underestimate, or why you cannot tell.

   a) 34 × 67 _____ b) 81 × 74 _____

6. There are 36 rows of tables in the library.
   There are 18 tables in each row.
   About how many tables are in the library? _____

7. Alex delivers the newspaper every day of the week.
   He delivers 72 papers a day.
   a) About how many newspapers does he deliver in 1 week? _____

   b) About how many newspapers does he deliver in 1 month? _____

8. The estimated answer to a multiplication question is 3500.
   What might the question be? _____

Name _____ Date _____

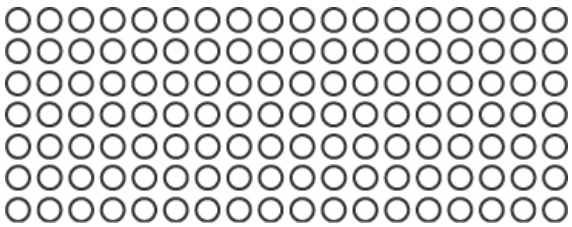
Master 3.32

Extra Practice 5

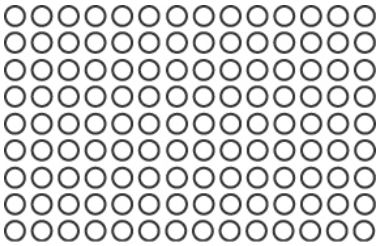
Lesson 5: Using Mental Math to Multiply

1. Which product does each diagram represent?

a)



b)



2. Sketch a diagram for each question, then multiply.

a) 8 × 35 b) 46 × 9 c) 51 × 5 d) 4 × 68

3. Multiply. Think about halving and doubling.

a) To find 14 × 45: I can think of _____ × 90 = _____

14 × 45 = _____

b) To find 25 × 18: I can think of 50 × _____ = _____

25 × 18 = _____

4. Multiply. Think about halving and doubling.

a) 50 × 18 = _____ b) 25 × 20 = _____ c) 32 × 25 = _____

5. Kira bought 42 stickers. Each sticker cost 50¢.

How much did Kira spend? _____

6. Use mental math to multiply.

a) 7 × 399 = _____ b) 9 × 502 = _____

c) 48 × 25 = _____ d) 11 × 62 = _____

Name _____ Date _____

Master 3.33

Extra Practice 6

Lesson 6: Multiplying 2-Digit Numbers

1. Complete each factor in expanded form.
   a) 34 × 65 = (30 + ____) × (____ + 5)
   b) 56 × 89 = (_____ + _____) × (80 + 9)
2. Complete the partial products.
   72 × 58 = (70 + ____) × (50 + 8)
   = (70 × ____) + (70 × ____) + (2 × ____) + (2 × _____)
   = _____ + _____ + _____ + _____
   = _____
3. Sketch a diagram to find 35 × 14. _____
4. Write each product in expanded form. Then find the product.
   a) 54 × 63 = _____ b) 75 × 42 = _____
5. Joy works 40 hours a week. She is paid $12 an hour.
   a) How much does Joy make in 1 week? _____
   b) How much does Joy make in 3 weeks? _____
6. Eli packed 35 boxes of books. He put 42 books in each box.
   Tess packed 24 boxes of books. She put 65 books in each box.
   a) Who packed more books? _____
   b) How many more books did that person pack? _____
7. Edita wants to make 24 towers using 55 blocks for each tower.
   How many blocks will she use altogether? _____
8. Multiply. Estimate to check.
   a) 42 × 28 b) 28 × 34

Name _____ Date _____

Master 3.34

Extra Practice 7

Lesson 7: Estimating Quotients to Solve Problems

1. Which compatible numbers would you use to estimate each quotient?
   a) 494 ÷ 5 _____ b) 682 ÷ 7 _____
   c) 175 ÷ 2 _____ d) 532 ÷ 5 _____
2. Use front-end rounding or compatible numbers to estimate each quotient.
   a) 395 ÷ 4 = _____ b) 379 ÷ 7 = _____ c) 286 ÷ 5 = _____
   d) 121 ÷ 3 = _____ e) 758 ÷ 8 = _____ f) 347 ÷ 6 = _____
3. Six hundred forty-five notebooks are packaged in packs of 7.
   About how many packs will there be? _____
4. Four hundred ten pencils are packaged in pencil cases of 4.
   About how many pencil cases are filled? _____
5. There are 9 chapters in a book.
   There are 458 pages in the book.
   The chapters have about the same number of pages.
   About how many pages are in each chapter? _____
6. Christie collects postcards.
   She has 345 postcards that she will put in an album.
   Christie puts 2 postcards on each page.
   About how many pages does she need in an album? _____
7. The Grade 5 class is selling raffle tickets.
   Eight students have already sold 568 tickets.
   They sold about the same number.
   About how many tickets did each student sell? _____
8. Seven stores put out 236 bags of garbage in a week.
   a) About how many bags does each store put out? _____
   b) What assumptions did you make? _____

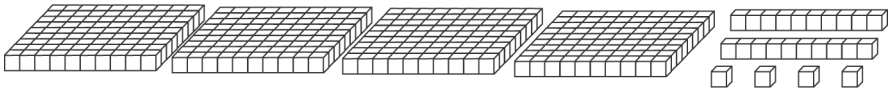
Name _____ Date _____

Master 3.35

Extra Practice 8

Lesson 8: Dividing a 3-Digit Number by a 1-Digit Number

1. Use Base Ten Blocks to find 424 ÷ 4. _____



2. Divide.

   a) 466 ÷ 2 = _____ b) 635 ÷ 2 = _____ c) 810 ÷ 2 = _____

   d) 900 ÷ 2 = _____ e) 842 ÷ 2 = _____ f) 407 ÷ 2 = _____

   Before you divide by 2, how can you tell if there will be a remainder?

   _____

3. Use repeated subtraction to divide.

   a) 540 ÷ 9 = _____ b) 720 ÷ 8 = _____ c) 470 ÷ 7 = _____

4. Divide.

   a) 286 ÷ 2 = _____ b) 373 ÷ 4 = _____ c) 815 ÷ 5 = _____

   d) $9\overline{)738}$ = _____ e) $7\overline{)815}$ = _____ f) $6\overline{)932}$ = _____

5. Sydney is making packages of 6 pencil crayons.
   She has 710 pencil crayons.
   How many packages of pencil crayons can Sydney make? _____

6. Six buses will carry students on the end of year trip.
   There are 246 students on the trip.
   How many students are on each bus? _____

7. Suppose you divide a 3-digit number by a 1-digit number.
   You have a remainder of 8.
   Which number are you dividing by? _____

8. How can you tell, without dividing, that the quotient of 459 ÷ 3 has 3 digits?

   _____

Name _____ Date _____

Master 3.36

Extra Practice 9

Lesson 9: Other Strategies for Dividing Whole Numbers

1. Find each quotient. Use Base Ten Blocks and place value. Record your work.

   a) 264 ÷ 3

   b) 588 ÷ 7

   c) 639 ÷ 4

   d) 174 ÷ 8

2. In a 5-day week, a factory makes 635 bicycles. Suppose the same number of bicycles is made each day. How many bicycles are made each day? _____

3. Find each quotient.

   a) 925 ÷ 6 = _____

   b) 376 ÷ 5 = _____

   c) 388 ÷ 2 = _____

   d) 930 ÷ 9 = _____

Name _____ Date _____

Master 3.37

Extra Practice 10

Lesson 10: Solving Problems

1. Tickets to a school play cost $8 for an adult and $5 for a child.
   Sixty adult tickets and 45 child tickets were sold.
   How much money was made on the sale of tickets? _____

2. Katherine's dog, Blackie, eats 21 kg of dog kibble in 3 weeks.
   How much kibble will he eat in 10 weeks? _____

3. Ellie collects sports cards.
   She has 568 hockey cards.
   Ellie has 320 baseball cards.
   She is storing them in 8 boxes.
   Each box has the same number of cards.
   How many sports cards does Ellie have in each box? _____

4. Alan has finished organizing his photos in an album.
   He put 4 small photos on a page.
   Alan has filled 85 pages with small photos.
   He put 2 large photos on a page.
   Alan has filled 43 pages with large photos.
   How many photos does he have in his album? _____

Name _____ Date _____

Master 3.38a

Extra Practice Sample Solutions

Extra Practice 1 – Master 3.28

Lesson 1: Patterns in Multiplication and Division

1. 9 × 7 = 63; 63 days
2. **a)** 8 × 9 = 72; 9 × 8 = 72; 72 ÷ 9 = 8; 72 ÷ 8 = 9
   b) 6 × 8 = 48; 8 × 6 = 48; 48 ÷ 6 = 8; 48 ÷ 8 = 6
3. The product 7 × 9 is 7 more than the product 7 × 8. So, 7 × 9 = 56 + 7 = 63
4. **a)** 0 **b)** 25 **c)** 12 **d)** 8 **e)** 28 **f)** 0
5. **a)** 9 **b)** 9 **c)** 9 **d)** 1 **e)** 0 **f)** 9
6. 8 × 7 = 56; 56 markers
7. 72 ÷ 8 = 9; 9 students
8. **a)** 5 × 5 = 25 **b)** 7 × 8 = 56 **c)** 4 × 8 = 32
9. **a)** 8 **b)** 30 **c)** 6 **d)** 45 **e)** 0 **f)** 0

Extra Practice 2 – Master 3.29

Lesson 2: Other Strategies for Multiplying and Dividing

1. **a)** 2 × 7 = 14; 4 × 7 = 28
   b) 3 × 6 = 18; 6 × 6 = 36
   c) 4 × 8 = 32; 8 × 8 = 64
2. Arrays may vary. Students may draw:
   a) 4 rows of 7 **b)** 6 rows of 6
   c) 8 rows of 8
3. **a)** I could use 8 × 7 = 56; then double 56
   b) 8 × 14 = 56 + 56 = 112
4. **a)** 36 ÷ 4 = 9; 9 teams
   b) One-half of 36 is 18; 18 students are not in Grade 5.
   c) 36 ÷ 6 = 6; 6 students
5. **a)** $8 × 8 = $64
   b) $8 × 2 = $16; $16 × 2 = $32; $32 × 2 = $64
6. 3 × 6 = 18; so I double 3 to get 6 × 6, and double 18 to get 36: 6 × 6 = 36
7. **a)** 8 **b)** 5 **c)** 18
8. 72 ÷ 2 = 36; 36 ÷ 2 = 18; 18 ÷ 2 = 9; so, 72 ÷ 8 = 9

Extra Practice 3 – Master 3.30

Lesson 3: Multiplying with Multiples of 10

1. **a)** 210 **b)** 450 **c)** 240 **d)** 300
2. **a)** 420 **b)** 720 **c)** 630 **d)** 560 **e)** 5600 **f)** 56 000
3. **a)** 1200 **b)** 2500 **c)** 4200 **d)** 2400 **e)** 450 **f)** 42 000
4. 1200 cm
5. **a)** $50 **b)** $1300 **c)** $2300
6. 6 × 6 = 36, so 6 × 6000 = 36 000
   6 × 5 = 30, so 6 × 5000 = 30 000; the product of 6 and 5 is a multiple of 10
7. $310
8. Yes, because 4 × 400 = 1600, which is greater than 1500

Extra Practice 4 – Master 3.31

Lesson 4: Estimating Products to Solve Problems

1. **a)** 70 **b)** 90 **c)** 30 **d)** 90
2. **a)** 500 **b)** 700 **c)** 900 **d)** 900
3. Answers may vary.
   a) 30 × 70 = 2100 **b)** 80 × 60 = 4800
4. **a)** 70 × 50 = 3500; product is greater than 3500 because both factors were rounded down
   b) 70 × 40 = 2800; product is less than 3500 because both factors were rounded up
5. **a)** 30 × 70 = 2100; I cannot tell because one number was rounded down and the other number was rounded up
   b) 80 × 70 = 5600; an underestimate because both numbers were rounded down
6. 36 × 18 is about 35 × 20 = 700; there are about 700 tables in the library
7. **a)** 72 × 7 is about 70 × 7 = 490
   b) 30 × 490 is about 30 × 500 = 15 000
8. 70 × 50 = 3500; so one question might be 71 × 49

Extra Practice 5 – Master 3.32

Lesson 5: Using Mental Math to Multiply

1. **a)** 18 × 7 = 126 **b)** 14 × 9 = 126
2. Diagrams may vary.
   a) 280 **b)** 414 **c)** 255 **d)** 272
3. **a)** 14 × 45 = 7 × 90 = 630
   b) 25 × 18 = 50 × 9 = 450
4. **a)** 50 × 18 = 100 × 9 = 900
   b) 25 × 20 = 50 × 10 = 500
   c) 32 × 25 = 16 × 50 = 8 × 100 = 800
5. 42 × 50¢ = 21 × 100¢ = $21
6. **a)** 2793 **b)** 4518 **c)** 1200 **d)** 682

Name _____ Date _____

Master 3.38b

Extra Practice Sample Solutions continued

Extra Practice 6 – Master 3.33

Lesson 6: Multiplying 2-Digit Numbers

1. **a)** (30 + 4) × (60 + 5) **b)** (50 + 6) × (80 + 9)
2. 72 × 58 = (70 + 2) × (50 + 8)
   = (70 × 50)+ (70 × 8)+ (2 × 50) + (2 × 8)
   = 3500 + 560 + 100 + 16
   = 4176
3. Diagrams may vary. 490
4. **a)** 54 × 63 = (50 + 4) × (60 + 3)
   = (50 × 60)+(50 × 3)+(4 × 60)+(4 × 3)
   = 3000 + 150 + 240 + 12
   = 3402
   b) 75 × 42 = (70 + 5) × (40 + 2)
   = (70 × 40)+(70 × 2)+(5 × 40)+(5 × 2)
   = 2800 + 140 + 200 + 10
   = 3150
5. **a)** $480 **b)** $1440
6. **a)** Tess **b)** 90 books
7. 1320
8. **a)** Estimate: 40 × 30 = 1200; product: 1176
   b) Estimate: 30 × 30 = 900; product: 952

Extra Practice 7 – Master 3.34

Lesson 7: Estimating Quotients to Solve Problems

Estimates may vary.

1. **a)** 500 ÷ 5 = 100 **b)** 700 ÷ 7 = 100
   c) 180 ÷ 2 = 90 **d)** 500 ÷ 5 = 100
2. **a)** About 100 **b)** About 50 **c)** About 60
   d) About 40 **e)** About 90 **f)** About 60
3. About 90 packs
4. About 100 pencil cases
5. About 50 pages
6. About 170 pages
7. About 70 tickets
8. **a)** About 30 bags
   b) I assumed each store put out about the same number of bags.

Extra Practice 8 – Master 3.35

Lesson 8: Dividing a 3-Digit Number by a 1-Digit Number

1. 106
2. **a)** 233 **b)** 317 R1 **c)** 405
   d) 450 **e)** 421 **f)** 203 R1
   If the dividend is odd, there will be a remainder of 1.
3. **a)** 60 **b)** 90 **c)** 67 R1
4. **a)** 143 **b)** 93 R1 **c)** 163
   d) 82 **e)** 116 R3 **f)** 155 R2
5. **a)** 118 packages; there will be 2 crayons left over.
6. 41 students
7. 9
8. 459 is greater than 300, and 3 × 100 = 300, so the quotient will be greater than 100, so it will have 3 digits.

Extra Practice 9 – Master 3.36

Lesson 9: Other Strategies for Dividing Whole Numbers

1. **a)** 88 **b)** 84 **c)** 159 R3 **d)** 21 R6
2. 127 bicycles
3. **a)** 154 R1 **b)** 75 R1 **c)** 194 **d)** 103 R3

Extra Practice 10 – Master 3.37

Lesson 10: Solving Problems

1. $705
2. 70 kg
3. 111 cards
4. 426 photos