Name _____ Date _____

Extra Practice 1A

Lesson 3.1: Fractions to Decimals

Use a calculator when you need to.

1. **a)** Write each fraction as a decimal.

i) $\frac{2}{5}$ **ii)** $\frac{1}{4}$ **iii)** $\frac{1}{6}$ **iv)** $\frac{2}{7}$ **v)** $\frac{3}{8}$

b) Identify the decimals in part a as terminating or repeating.

2. **a)** Write each fraction as a decimal.

i) $\frac{1}{9}$ **ii)** $\frac{2}{9}$ **iii)** $\frac{3}{9}$ **iv)** $\frac{4}{9}$

b) What pattern do you see in your answers to part a?

c) Use your pattern to predict the decimal form of each fraction.

i) $\frac{5}{9}$ **ii)** $\frac{7}{9}$ **iii)** $\frac{8}{9}$

3. Write each decimal as a fraction in simplest form.

a) 0.04 **b)** 0.875 **c)** $0.\overline{6}$ **d)** $0.\overline{45}$

4. For each fraction, write an equivalent fraction with a denominator of 10, 100, or 1000. Then, write the fraction as a decimal.

a) $\frac{1}{25}$ **b)** $\frac{4}{5}$ **c)** $\frac{379}{500}$ **d)** $\frac{13}{20}$ **e)** $\frac{19}{200}$

5. Write the first 6 fractions as decimals. What patterns do you see? Use the patterns to write the remaining fractions as decimals.

Fraction	Decimal
$\frac{1}{33}$	
$\frac{2}{33}$	
$\frac{3}{33}$	
$\frac{4}{33}$	
$\frac{5}{33}$	
$\frac{6}{33}$	

Fraction	Decimal
$\frac{7}{33}$	
$\frac{8}{33}$	
$\frac{9}{33}$	
$\frac{10}{33}$	
$\frac{11}{33}$	
$\frac{12}{33}$	

Name _____ Date _____

Extra Practice 2A

Lesson 3.2: Comparing and Ordering Fractions and Decimals

1. Draw a number line.
Order these numbers on the line.

$\frac{1}{9}, \frac{10}{9}, \frac{4}{9}, 1\frac{5}{9}, \frac{3}{9}, 2, \frac{16}{9}$

2. Use benchmarks and a number line to order each set of numbers from least to greatest.

a) $1\frac{1}{6}, \frac{2}{3}, \frac{1}{12}, \frac{19}{12}$ **b)** $1, \frac{5}{8}, \frac{17}{16}, \frac{1}{4}$ **c)** $2\frac{1}{4}, \frac{5}{2}, \frac{9}{3}, \frac{20}{6}$

3. Order each set of numbers from least to greatest.
Explain the method you used.

a) $0.8, \frac{2}{5}, \frac{7}{6}, 0.801$ **b)** $\frac{11}{5}, 3.4, 2, 3\frac{1}{4}$

4. Find a number between each pair of numbers.

a) $\frac{8}{11}, \frac{9}{11}$ **b)** $1\frac{3}{5}, \frac{9}{5}$ **c)** $2.4, 2\frac{1}{2}$ **d)** $4.3, 4.4$

5. Identify the number that has been incorrectly placed.
Explain how you know.

a) $\frac{2}{5}, 0.55, \frac{1}{2}, \frac{2}{3}$ **b)** $\frac{4}{5}, 0.83, 0.9, \frac{6}{7}$

6. Alex, Ben, Kathy, and Graeme sold lemonade to raise money for their local animal shelter.

Student	Alex	Ben	Kathy	Graeme
Jugs of Lemonade Sold	$1\frac{2}{3}$	1.75	$\frac{19}{10}$	$1\frac{4}{5}$

a) Use a number line to order the jugs of lemonade sold.
b) Who sold the most lemonade?
c) Who sold the least lemonade?
d) Use a different method. Verify your answers from parts b and c.

Name _____ Date _____

Extra Practice 3A

Lesson 3.3: Adding and Subtracting Decimals

1. Use front–end estimation to estimate each sum or difference.
a) 3.261 – 1.945 **b)** 36.2 + 7.4
c) 3.09 + 5.76 + 18.2 **c)** 24.346 – 17.014

2. Add or subtract. Use estimation to check the reasonableness of your answers.
a) 8.42 + 1.9 + 38.06 **b)** 9.57 – 6.89
c) 7.6 – 2.97 **d)** 29.43 + 0.96 + 8.43

3. Athina had $1000 to buy books for the library.
At the first store she bought books costing $4.95, $18.99, $25.50, and $16.90.
a) How much money did Athina spend at the first store?
b) How much money does Athina have left to spend on books?

4. William can take one of two routes from his house to his parents' home. If he takes the highway, the distance is 1420.6 km. If he does not take the highway, the distance is 1285.9 km.
a) How far will he drive if he takes the highway on the way there and does not take the highway on the return journey?
b) How much longer is the highway route?

5. One day, the average price for a litre of gasoline was $1.214, in Vancouver. The same day, the average price for a litre in Saskatoon was $1.116. How much more was a litre of gasoline in Vancouver than in Saskatoon?

6. Find two numbers with a difference of 37.389.

7. A student added the numbers 12.84 and 43.2 and got the sum 17.16.
a) What mistake did the student make?
b) What is the correct answer?

Name _____ Date _____

Extra Practice 4A

Lesson 3.4: Multiplying Decimals

1. Use Base Ten Blocks to find each product.
Record your work on grid paper.
a) 1.2 × 1.8 **b)** 2.3 × 1.9 **c)** 0.8 × 1.4

2. Use a rectangular model to multiply.
a) 3.5 × 2.7 **b)** 5.2 × 0.7 **c)** 1.6 × 2.6

3. Multiply. Estimate to check your answers are reasonable.
a) 8.4 × 2.5 **b)** 6.3 × 3.6 **c)** 2.9 × 4.7

4. Jose drives 12.3 km to work. He drives the same distance home. How many kilometres does Jose drive in a 5-day work week?

5. A rectangular quilt has length 2.1 m and width 1.5 m.
What is its area?

6. Find the cost of each item at the store.
a) 2.5 kg of apples at $0.90/kg
b) 5.0 kg of onions at $1.72/kg
c) 1.5 kg of carrots at $1.55/kg

7. The product of 2 decimals is 0.32.
What might the decimals have been?
Find as many answers as you can.

8. **a)** Multiply 18 × 35.
b) Use only the result from part a and estimation.
Find each product.
Explain your strategies.
i) 1.8 × 35 **ii)** 18 × 0.35
iii) 18 × 3.5 **iv)** 0.18 × 0.35

Name _____ Date _____

Extra Practice 5A

Lesson 3.5: Dividing Decimals

1. Estimate to choose the correct quotient for each division question.

	Questions	Possible Quotients		
a)	86.4 ÷ 6	144	14.4	1.44
b)	120.4 ÷ 0.2	60.2	6.02	602
c)	39.6 ÷ 0.9	44	4.4	0.44

2. Divide.

a) 189 ÷ 0.3 **b)** 262.5 ÷ 0.5 **c)** 28.4 ÷ 0.4

3. Why do all these division statements have 8 as the answer?
Which one is easiest to calculate? Explain.

i) 40 ÷ 5 **ii)** 4.0 ÷ 0.5 **iii)** 0.4 ÷ 0.05 **iv)** 400 ÷ 50

4. The area of a rectangular rug is 20.4 m^2.
The length is 6 m. What is the width?

5. It costs $1.84 to buy 0.8 L of fruit juice.

a) About how much does 1 L of juice cost?
b) What is the actual cost of 1 L of juice?
c) Suppose you spent $10 on fruit juice. What volume did you buy?

6. A book is 0.7 cm thick. How many books are in a stack 11.2 cm high?

7. The quotient of 2 decimals is 0.24.
What might the decimals have been?
Write as many pairs of decimals as you can.

Name _____ Date _____

Extra Practice 6A

Lesson 3.6: Order of Operations with Decimals

Evaluate.

1. 3.6 + 4.2 – 5.7
2. 37.4 + 6 × 9
3. 19.3 – 54.3 ÷ 3
4. 26.9 – 4 + 8.7 × 5
5. 9.2 + 8.3 – 2.6 + 2
6. 13.4 – (12.8 – 3.9)
7. 17 × 5.8 + 6
8. 43.7 – (17.4 + 21.6)
9. 9.9 + (5.6 × 7) ÷ 4
10. (12.6 + 3.2) – (19.4 ÷ 2)
11. 2.39 + 15.4 × (3.8 – 2.9)
12. 3.2 + 5.6 × 7.2 ÷ 0.4 – 9.3

Use a calculator to evaluate.

13. 46.78 – 6.1 × 2.3
14. 75.06 × (3.45 – 1.2)
15. (98.5 + 7) ÷ 2.5
16. 70.56 – 32.8 ÷ 4.1

17. Marie, Jillian, and Joseph got different answers for the question:
12 × (4.8 ÷ 0.3) – 3.6 × 3.5
Marie's answer was 66.
Jillian's answer was 659.4.
Joseph's answer was 179.4.
Which student had the correct answer?
How do you know?

Name _____ Date _____

Extra Practice 7A

Lesson 3.7: Relating Fractions, Decimals, and Percents

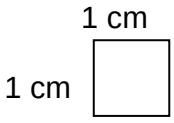
1. Write each percent as a fraction and a decimal.

a) 10% **b)** 15% **c)** 45% **d)** 32%
e) 89% **f)** 72% **g)** 21% **h)** 90%
i) 65% **j)** 55%

2. Write each fraction as a decimal and a percent.

a) $\frac{17}{50}$ **b)** $\frac{13}{20}$ **c)** $\frac{1}{5}$ **d)** $\frac{1}{4}$
e) $\frac{7}{10}$ **f)** $\frac{21}{42}$ **g)** $\frac{32}{40}$ **h)** $\frac{3}{75}$
i) $\frac{27}{150}$ **j)** $\frac{24}{120}$

3. This square represents 25% of a larger shape.
Use grid paper.
a) Draw 50% of the larger shape.
b) Draw 75% of the larger shape.
c) Draw the larger shape.



4. Chris' test scores were $\frac{8}{10}$, $\frac{27}{36}$, and $\frac{41}{50}$.
Write each test score as a percent.
Order the test scores from greatest to least.
Which was Chris' best test? How do you know?

5. Jules created a design on a grid.
He coloured 0.45 of the grid blue.
He coloured 13% of the grid yellow.
He coloured $\frac{1}{4}$ of the grid red.
He coloured the rest of the grid green.
What percent of the grid is green?
How do you know?

Name _____ Date _____

Extra Practice 8A

Lesson 3.8: Solving Percent Problems

1. Calculate

a) 1% of 84 **b)** 15% of 30 **c)** 25% of 84
d) 55% of 90 **e)** 74% of 420 **f)** 93% of 114

2. A salesperson is paid 4% of the total sales.
What is the salesperson paid for a day when the value of the sales are $1265?

3. Find the tip left by each customer at a café.

a) Luigi: 20% of $55.00 **b)** Farah: 10% of $32.20
c) Andrea: 15% of $28.40 **d)** Marc: 25% of $18.56

4. A car presently costs $24 500. The price is due to increase by 4%.

a) How much is the increase?
b) What will the price be after the increase?

5. Find the sale price of each item before taxes.

a) pants 30% off $65 **b)** shirt: 20% off $36.50
c) skirt: 45% off $29.00 **d)** shoes: 35% off $75.00

6. The Goods and Services Tax (GST) is currently 6%.
For each item below:

a) Find the GST.
b) Find the cost of each item including GST.
i) shoes costing $65.00
ii) a telephone bill of $80.20
iii) a car service costing $105.30

7. A real estate agent receives 2% of the sale price of each house she sells.
How much does she receive for selling a house for:

a) $82 400
b) $356 200

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Extra Practice Sample Answers

Extra Practice 1A

Lesson 3.1

1. **i)** 0.4, terminating **ii)** 0.25, terminating
iii) $0.1\overline{6}$, repeating **iv)** $0.\overline{285714}$, repeating
v) 0.375, terminating

2. **a)** **i)** $0.\overline{1}$ **ii)** $0.\overline{2}$ **iii)** $0.\overline{3}$ **iv)** $0.\overline{4}$
b) They are all repeating decimals with the repeating digit being the same as the numerator from the fraction.
c) **i)** $0.\overline{5}$ **ii)** $0.\overline{7}$ **iii)** $0.\overline{8}$

3. **a)** $\frac{1}{25}$ **b)** $\frac{7}{8}$ **c)** $\frac{2}{3}$ **d)** $\frac{5}{11}$

4. **a)** $\frac{4}{100}$, 0.04 **b)** $\frac{8}{10}$, 0.8 **c)** $\frac{758}{1000}$, 0.758 **d)** $\frac{65}{100}$, 0.65 **e)** $\frac{95}{1000}$, 0.095

5.

Fraction	Decimal
$\frac{1}{33}$	$0.\overline{03}$
$\frac{2}{33}$	$0.\overline{06}$
$\frac{3}{33}$	$0.\overline{09}$
$\frac{4}{33}$	$0.\overline{12}$
$\frac{5}{33}$	$0.\overline{15}$
$\frac{6}{33}$	$0.\overline{18}$

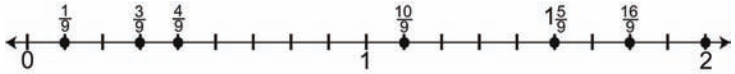
Fraction	Decimal
$\frac{7}{33}$	$0.\overline{21}$
$\frac{8}{33}$	$0.\overline{24}$
$\frac{9}{33}$	$0.\overline{27}$
$\frac{10}{33}$	$0.\overline{30}$
$\frac{11}{33}$	$0.\overline{3}$
$\frac{12}{33}$	$0.\overline{36}$

The digits in the repeating core increase by 0.03 as the numerator of the fraction increases by 1.

Extra Practice 2A

Lesson 3.2

1.



From least to greatest: $\frac{1}{9}, \frac{3}{9}, \frac{4}{9}, \frac{10}{9}, 1\frac{5}{9}, \frac{16}{9}, 2$

2. **a)** $\frac{1}{12}, \frac{2}{3}, 1\frac{1}{6}, \frac{19}{12}$ **b)** $\frac{1}{4}, \frac{5}{8}, 1, \frac{17}{16}$

c) $2\frac{1}{4}, \frac{5}{2}, \frac{9}{3}, \frac{20}{6}$

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3. **a)** $\frac{2}{5}$, 0.8, 0.801, $\frac{7}{6}$; I used the place values of $\frac{1}{2}$ and 1 to order the numbers.

b) 2, $\frac{11}{5}$, $3\frac{1}{4}$, 3.4; I wrote each number as an improper fraction with denominator 20.
I compared the numerators and ordered them from least to greatest.

4. Answers will vary. For example:

a) $\frac{17}{22}$ **b)** $\frac{17}{10}$ **c)** 2.45 **d)** 4.35

5. **a)** $\frac{1}{2}$ = 0.5, which is less than 0.55, but greater than $\frac{2}{5}$

b) 0.9, which is greater than $\frac{6}{7}$

6. **a)**

From least to greatest: $1\frac{2}{3}$, 1.75, $1\frac{4}{5}$, $\frac{19}{10}$

b) Kathy sold the most lemonade.
c) Alex sold the least lemonade.
d) Answers will vary.
I wrote each number as a fraction with denominator 60, then compared the numerators.

Extra Practice 3A

Lesson 3.3

1. **a)** 2 **b)** 43 **c)** 26 **d)** 7
2. **a)** 48.38 **b)** 2.68 **c)** 4.63 **d)** 38.82
3. **a)** $66.34 **b)** $933.66
4. **a)** 2706.5 km **b)** 134.7 km
5. $0.098
6. Answers will vary. For example: 29.277 and 66.666
7. **a)** The student did not align the digits correctly. The student did not add digits with the same place value.
b) 56.04

Extra Practice 4A

Lesson 3.4

1. Students' answers should include drawings on grid paper.
a) 2.16 **b)** 4.37 **c)** 1.12
2. **a)** 9.45 **b)** 3.64 **c)** 4.16
3. **a)** 8 × 2 = 16; 21 **b)** 6 × 3 = 18; 22.68
c) 2 × 4 = 8; 13.63
4. 2 × 12.3 × 5 = 123 km
5. 2.1 × 1.5 = 3.15 m²
6. **a)** $2.25 **b)** $8.60 **c)** $2.33
7. Answers will vary. For example: 0.8 × 0.4; 1.6 × 0.2; 32 × 0.01
8. **a)** 630
b) **i)** 63 **ii)** 6.3 **iii)** 63 **iv)** 0.063

Name _____ Date _____

Extra Practice 5A

Lesson 3.5

1. **a)** 14.4 **b)** 602 **c)** 44

2. **a)** 630 **b)** 525 **c)** 71

3. All of the division statements are equivalent. In part ii, both the dividend and divisor from part i are divided by 10. In part iii, they are divided by 100. In part iv, they are multiplied by 10.
Part i is the easiest to calculate because it involves no decimals and the numbers are not too large.

4. 3.4 m

5. **a)** $2.00 **b)** $2.30 **c)** 4.35 L

6. 16 books

7. Answers will vary. For example: 0.48 ÷ 2; 0.96 ÷ 4; 0.12 ÷ 0.5; 2.4 ÷ 10

Extra Practice 6A

Lesson 3.6

1. 2.1 **2.** 91.4 **3.** 1.2

4. 66.4 **5.** 16.9 **6.** 4.5

7. 104.6 **8.** 4.7 **9.** 19.7

10. 6.1 **11.** 16.25 **12.** 94.7

13. 32.75 **14.** 168.885 **15.** 42.2

16. 62.56

17. 179.4
Joseph's answer was correct, because he correctly followed the order of operations.

Extra Practice 7A

Lesson 3.7

1. Students' answers should include number lines

a) $\frac{1}{10}$, 0.1 **b)** $\frac{3}{20}$, 0.15 **c)** $\frac{9}{20}$, 0.45

d) $\frac{8}{25}$, 0.32 **e)** $\frac{89}{100}$, 0.89 **f)** $\frac{18}{25}$, 0.72

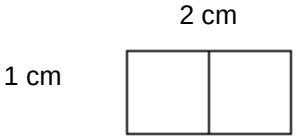
g) $\frac{21}{100}$, 0.21 **h)** $\frac{9}{10}$, 0.9 **i)** $\frac{13}{20}$, 0.65

j) $\frac{11}{20}$, 0.55

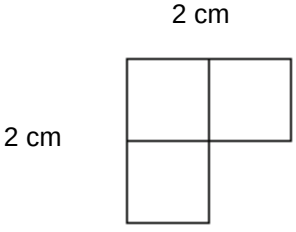
2. **a)** 34%, 0.34 **b)** 65%, 0.65 **c)** 20%, 0.2
d) 25%, 0.25 **e)** 70%, 0.7 **f)** 50%, 0.5
g) 80%, 0.8 **h)** 4%, 0.04 **i)** 18%, 0.18
j) 20%, 0.2

3. Diagrams may vary.

a)



b)



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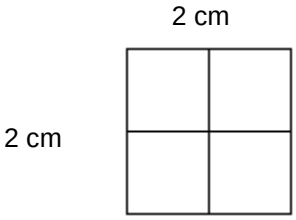
c)



4. **a)** 80%, 75% ,82%
b) 82% > 80% > 75%
c) $\frac{41}{50}$ was Chris' best test score. This is the greatest percent.

5. 17%

13% = 0.13, $\frac{1}{4}$ = 0.25
0.13 + 0.25 + 0.45 = 0.83
1.0 – 0.83 = 0.17, or 17%

Extra Practice 8A

Lesson 3.8

1. **a)** 0.84 **b)** 4.5 **c)** 21
d) 49.5 **e)** 310.8 **f)** 106.02

2. $50.60

3. **a)** $11.00 **b)** $3.22 **c)** $4.26 **d)** $4.64

4. **a)** $980 **b)** $25 480

5. **a)** $45.50 **b)** $29.20
c) $15.95 **d)** $48.75

6. **i)** **a)** $3.90 **b)** $68.90
ii) **a)** $4.81 **b)** $85.01
iii) **a)** $6.32 **b)** $111.62

7. **a)** $1648.00 **b)** $7124.00