Name: _____ Date: _____

Multiplying and Dividing Decimals

Lesson 9.1 Multiplying Decimals

Multiply. Write the product as a decimal.

1. $0.9 \times 4 =$ _____ tenths $\times$ 4

$=$ _____ tenths

$=$ _____

2. $1.5 \times 3 =$ _____ tenths $\times$ 3

$=$ _____ tenths

$=$ _____

3. $0.08 \times 5 =$ _____ hundredths $\times$ 5

$=$ _____ hundredths

$=$ _____

4. $0.27 \times 6 =$ _____ hundredths $\times$ 6

$=$ _____ hundredths

$=$ _____

5. $0.36 \times 7 =$ _____ hundredths $\times$ 7

$=$ _____ hundredths

$=$ _____

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Multiply.

6. $\begin{array}{r} 0.6 \\ \times \quad 8 \\ \hline \end{array}$

7. $\begin{array}{r} 3.5 \\ \times \quad 7 \\ \hline \end{array}$

8. $\begin{array}{r} 3.9 \\ \times \quad 9 \\ \hline \end{array}$

9. $3 \times 8.7 =$ _____

10. $4 \times 6.9 =$ _____

11. $5 \times 7.4 =$ _____

12. $8 \times 9.2 =$ _____

13. $\begin{array}{r} 0.07 \\ \times \quad 6 \\ \hline \end{array}$

14. $\begin{array}{r} 0.09 \\ \times \quad 7 \\ \hline \end{array}$

15. $\begin{array}{r} 5.36 \\ \times \quad 8 \\ \hline \end{array}$

16. $4 \times 7.04 =$ _____

17. $5 \times 4.58 =$ _____

18. $6 \times 5.64 =$ _____

19. $9 \times 8.36 =$ _____

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Lesson 9.2 Multiplying by Tens, Hundreds, or Thousands

Multiply.

1. $4.85 \times 10 =$ _____

2. $0.375 \times 10 =$ _____

3. $4.928 \times 100 =$ _____

4. $0.23 \times 1{,}000 =$ _____

Complete.

5. $7.45 \times$ _____ $= 74.5$

6. _____ $\times 10 = 662.2$

7. $0.809 \times$ _____ $= 80.9$

8. _____ $\times 100 = 403$

9. $5.7 \times$ _____ $= 5{,}700$

10. _____ $\times 1{,}000 = 108$

Complete.

11. $513 = 51.3 \times$ _____

$= 5.13 \times$ _____

$= 0.513 \times$ _____

12. $4{,}016 =$ _____ $\times 10$

$=$ _____ $\times 100$

$=$ _____ $\times 1{,}000$

Complete.

13. $0.954 \times 60 = (0.954 \times$ _____$) \times 10$

$=$ _____ $\times 10$

$=$ _____

14. $0.376 \times 800 = (0.376 \times$ _____$) \times 100$

$=$ _____ $\times 100$

$=$ _____

Name: _____ **Date:** _____

Complete.

15. $0.97 \times 3{,}000 = (0.97 \times \_\_\_\_\_) \times 1{,}000$

$= \_\_\_\_\_ \times 1{,}000$

$= \_\_\_\_\_$

Find each product.

16. $1.25 \times 20 = \_\_\_\_\_$

17. $2.8 \times 40 = \_\_\_\_\_$

18. $15.9 \times 300 = \_\_\_\_\_$

19 $7.286 \times 6{,}000 = \_\_\_\_\_$

Solve. Show your work.

20. There are 200 paperweights in a box. The mass of each paperweight is 0.085 kilogram. The mass of the empty box is 560 grams. What is the total mass of the box and 200 paperweights?

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Example

$0.685 \times 10 = 6.85$

$0.685 \times 10^2 = 68.5$

$0.685 \times 10^3 = 685$

Multiply.

21. $7.309 \times 10^2 =$ _____

22. $0.065 \times 10^2 =$ _____

23. $0.485 \times 10^3 =$ _____

24. $2.005 \times 10^3 =$ _____

Complete. Write 10, 10^2, or 10^3.

25. $0.085 \times$ _____ $= 85$

26. $9.08 \times$ _____ $= 908$

27. $0.5 \times$ _____ $= 500$

28. $0.07 \times$ _____ $= 70$

Complete. Write 10, 10^2, or 10^3.

29. $91 = 9.1 \times$ _____

$= 0.91 \times$ _____

$= 0.091 \times$ _____

30. $482 = 48.2 \times$ _____

$= 4.82 \times$ _____

$= 0.482 \times$ _____

31. $915 = 0.915 \times$ _____

$= 91.5 \times$ _____

$= 9.15 \times$ _____

32. $48.2 = 0.0482 \times$ _____

$= 0.482 \times$ _____

$= 4.82 \times$ _____

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Solve. Show your work.

33. 1×10^2 centimeters $=$ 1 meter. How many centimeters are in 3 meters?

34. Josh has a string that is 4,000 millimeters long. 1×10^3 millimeters $=$ 1 meter. How long is Josh's string in meters?

Name: _____ Date: _____

Lesson 9.3 Dividing Decimals

Complete. Write the quotient as a decimal.

1. 0.8 ÷ 2 = _____ tenths ÷ 2

= _____ tenths

= _____

2. 2.4 ÷ 4 = _____ tenths ÷ 4

= _____ tenths

= _____

3. 0.09 ÷ 3 = _____ hundredths ÷ 3

= _____ hundredths

= _____

4. 0.63 ÷ 7 = _____ hundredths ÷ 7

= _____ hundredths

= _____

5. 1.53 ÷ 9 = _____ hundredths ÷ 9

= _____ hundredths

= _____

Name: _____ **Date:** _____

Divide.

6. $4\overline{)9.2}$

7. $5\overline{)18.5}$

8. $8\overline{)25.6}$

9. $9\overline{)0.54}$

10. $3\overline{)33.99}$

11. $7\overline{)41.16}$

Divide.
Round each quotient to the nearest tenth.

12. 3.15 ÷ 4

13. 4.17 ÷ 6

Divide.
Round each quotient to the nearest hundredth.

14. 7.78 ÷ 3

15. 14.59 ÷ 7

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Lesson 9.4 Dividing by Tens, Hundreds, or Thousands

Divide.

1. 2.36 ÷ 10 = _____

2. 30.15 ÷ 10 = _____

3. 508.2 ÷ 100 = _____

4. 210 ÷ 100 = _____

5. 780 ÷ 1,000 = _____

6. 82,300 ÷ 1,000 = _____

Complete.

7. 2.87 ÷ _____ = 0.287

8. _____ ÷ 10 = 34.5

9. 319 ÷ _____ = 3.19

10. _____ ÷ 100 = 69.2

11. 5,460 ÷ _____ = 5.46

12. _____ ÷ 1,000 = 48

Complete.

13. 19.9 = 199 ÷ _____
= _____ ÷ 100
= _____ ÷ 1,000

14. 8.235 = _____ ÷ 10
= 823.5 ÷ _____
= 8,235 ÷ _____

15. 4.01 = _____ ÷ 10
= _____ ÷ 100
= _____ ÷ 1,000

16. 67.67 = 676.7 ÷ _____
= 6,767 ÷ _____
= 67,670 ÷ _____

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Complete.

17. $298 \div 20 = (298 \div \_\_\_\_\_) \div 10$

$= \_\_\_\_\_ \div 10$

$= \_\_\_\_\_$

18. $32 \div 800 = (32 \div \_\_\_\_\_) \div 100$

$= \_\_\_\_\_ \div 100$

$= \_\_\_\_\_$

19. $1{,}200 \div 6{,}000 = (1{,}200 \div \_\_\_\_\_) \div 1{,}000$

$= \_\_\_\_\_ \div 1{,}000$

$= \_\_\_\_\_$

Divide.

20. $450 \div 60 = \_\_\_\_\_$

21. $64.8 \div 80 = \_\_\_\_\_$

22. $36.8 \div 400 = \_\_\_\_\_$

23. $576 \div 900 = \_\_\_\_\_$

24. $1{,}050 \div 3{,}000 = \_\_\_\_\_$

25. $8{,}320 \div 4{,}000 = \_\_\_\_\_$

Name: _____ **Date:** _____

Solve. Show your work.

26. Susan pours 125 liters of apple juice into 500 cups equally. How many liters of apple juice are in each cup?

27. A 370-meter roll of string is cut into 2,000 pieces that are all the same length. Find the length of each cut piece of string.

Name: _____ **Date:** _____

28. Mr. Jones bought 30 files and some books. He paid $97.50 for the files. Each book cost 10 times as much as a file. What was the cost of each book?

29. Jane bought 10 pears and 11 oranges for $10.05. The total cost of 1 pear and 1 orange was $0.94. How much did 1 orange cost?

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Lesson 9.5 Estimating Decimals

Round each decimal to the nearest whole number. Then estimate the result.

1. $9.99 + $5.99

2. $49.50 + $19.65

3. $99.59 − $19.95

4. $89.90 − $20.25

5. 9.9 × 4.6

6. 39.7 × 7.6

7. 9.4 × 30.3

8. 34.8 ÷ 5.4

9. 87.7 ÷ 7.8

10. 96.49 ÷ 3.9

Name: _____ **Date:** _____

Round each number to the nearest tenth. Then estimate the result.

11. 9.48 km + 13.63 km

12. 8.07 kg − 3.79 kg

13. 7.56 kg × 9

14. 9.64 L ÷ 8

Solve. Show your work.

15. Each tin of biscuits is sold for $4.95. Estimate the cost of 4 tins of biscuits.

16. Vivien's handspan measures 18.5 centimeters. Estimate the number of times Vivien uses her handspan to measure a length of 1 meter 75 centimeters.

Name: _____ Date: _____

Lesson 9.6 Converting Metric Units

Convert to centimeters.

1. 8.25 m = 8.25 × _____

= _____ cm

2. 18.05 m = 18.05 × _____

= _____ cm

3. 50.80 m = 50.8 × _____

= _____ cm

4. 83.6 m = 83.6 × _____

= _____ cm

Convert to meters and centimeters.

5. 6.09 m = _____ m _____ cm

6. 23.25 m = _____ m _____ cm

7. 40.05 m = _____ m _____ cm

8. 58.48 m = _____ m _____ cm

Convert to meters.

9. 5.06 km = 5.06 × _____

= _____ m

10. 12.4 km = 12.4 × _____

= _____ m

Name: _____ **Date:** _____

Convert to kilometers and meters.

11. 8.005 km = _____ km _____ m

12. 15.35 km = _____ km _____ m

Convert to grams.

13. 2.5 kg = 2.5 × _____

= _____ g

14. 7.04 kg = 7.04 × _____

= _____ g

Convert to kilograms and grams.

15. 6.02 kg = _____ kg _____ g

16. 10.8 kg = _____ kg _____ g

Convert to milliters.

17. 1.155 L = 1.155 × _____

= _____ mL

18. 4.6 L = 4.6 × _____

= _____ mL

Convert the following to liters and milliters.

19. 3.285 L = _____ L _____ mL

20. 7.5 L = _____ L _____ mL

Name: _____ **Date:** _____

Solve. Show your work.

21. A bottle contains 2.25 liters of orange juice. Jeanette keeps 1 liter 200 milliliters in the refrigerator and divides equally among her 3 children. How much orange juice did each child get? Give your answer in milliliters.

22. James cycles 27.6 kilometers in 2 hours.

a. How far does he cycle in 1 hour? Give your answer in kilometers and meters.

b. How many meters does he cycle in 1 minute?

Name: _____ **Date:** _____

Express, as a decimal, in meters.

23. 78 cm = _____ m

24. 205 cm = _____ m

25. 1,408 cm = _____ m

26. 1,055 cm = _____ m

27. 9 m 25 cm = _____ m

28. 16 m 8 cm = _____ m

Express, as a decimal, in kilometers.

29. 850 m = _____ km

30. 950 m = _____ km

31. 2,790 m = _____ km

32. 4,050 m = _____ km

33. 5 km 750 m = _____ km

34. 2 km 80 m = _____ km

Express, as a decimal, in kilograms.

35. 850 g = _____ kg

36. 785 g = _____ kg

37. 1,240 g = _____ kg

38. 7,080 g = _____ kg

39. 7 kg 560 g = _____ kg

40. 5 kg 80 g = _____ kg

Express, as a decimal, in liters.

41. 950 mL = _____ L

42. 95 mL = _____ L

43. 9,065 mL = _____ L

44. 1,870 mL = _____ L

45. 3 L 906 mL = _____ L

46. 2 L 50 mL = _____ L

Name: _____ Date: _____

Solve. Show your work.

47. The mass of a bag of flour is 650 grams.

a. Charlene needs 15 bags to bake some bread. How much flour does Charlene need? Give your answer in kilograms.

b. Mable needs 2.6 kilograms of flour to bake some muffins. How many bags of flour does Mabel need?

Name: _____ **Date:** _____

48. Leon pours 12 liters 250 milliliters of water equally into 18 similar jugs. When all 18 jugs are full, Leon still has 1.36 liters of water left. How much water is in each jug? Give your answer in liters.

Name: _____ Date: _____

Lesson 9.7 Real-World Problems: Decimals

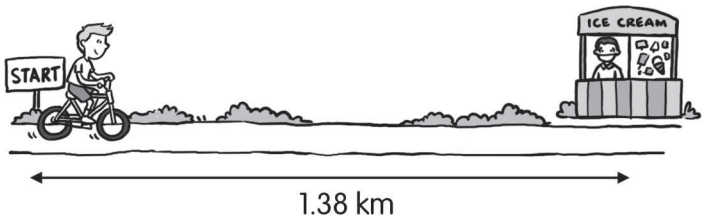
Solve. Show your work.

1. Each bottle contains 1.25 liters of orange juice. How many liters of orange juice are in 8 bottles?

2. Keith thinks of a number. When he multiples the number by 6 and subtracts 19.85 from the product, he gets 29.77. Find the number.

Name: _____ **Date:** _____

3. An ice cream stand is 1.38 kilometers from the starting point of a bike path. Brian rides his bike from the starting point to the ice cream stand and back to the starting point 3 times. How many kilometers does Brian ride his bike?



4. A bottle contains 0.85 liter of concentrated orange juice. Teresa adds 9 times as much water to the orange concentrate in the bottle to make drinks for her party.

a. How much water does Teresa add?

b. The capacity of each cup is 250 milliliters. How many full cups of juice can Teresa make?

Name: _____ **Date:** _____

5. The cost of 4 identical pencils is $1.90. Find the cost of 14 of these pencils.

6. The mass of a container is 5.81 kilograms when completely filled with sand. The mass of the container is 3.8 kilograms when $\frac{3}{8}$ of the sand is removed. What is the mass of the empty container?

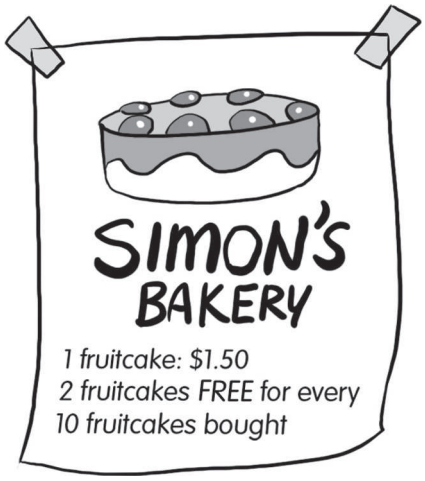
Name: _____ **Date:** _____

7. At the deli, 100 grams of ham cost $1.50 and 100 grams of sausages cost $0.85 more than the ham. Paul buys 1.2 kilograms of ham and 600 grams of sausages. How much does Paul pay?

8. Regina had 30 meters of ribbon. She gave 2.7 meters of the ribbon to each of her four friends and used the rest to tie some presents for her birthday party. Each present required 75 centimeters of ribbon to tie. Find the maximum number of presents Regina could tie.

Name: _____ **Date:** _____

9. Maria wants to shop at Simon's Bakery. She needs to buy 100 fruitcakes for her birthday party. How much will Maria need to spend?



10. The admission fee for an exhibition is $8.50 for each adult and $3.50 for each child. On Friday, a total of $5,120 was collected. 160 more children than adults visited the exhibition. How many children visited the exhibition on Friday?

Name: _____ **Date:** _____

11. The total mass of a box and 3 identical tennis balls is 1.02 kilograms. When the number of tennis balls in the box is tripled, the total mass becomes 2.16 kilograms. What is the mass, in kilograms, of the empty box?

12. The table shows the cost of shrimp at three stalls:

	Joe's Stall	Paul's Stall	Sam's Stall
Price of shrimp	$19.00 per kg	$2.20 per 100 g	$11.00 per 0.5 kg

a. Which two stalls sell shrimp at the same price? How much do they sell 1 kilogram of shrimp for?

b. How much money would you save if you bought 2.5 kilograms of shrimp from the least expensive stall instead of from the stalls in a.?

Name: _____ **Date:** _____

13. Mark and Carlos started saving money at the same time. Mark saved $1.20 daily and Carlos saved $0.30 more than Mark each day. How much did Mark save if Carlos saved a total of $11.40 more than Mark?

14. Fiona bought some oranges and 8 mangoes for a total of $30.80. For every mango Fiona bought, she could buy 4 oranges with the same amount of money. A mango cost $2.10 more than an orange.

a. What was the cost of each type of fruit?

b. Express the number of oranges bought as a fraction of the total number of fruits bought.

Name: _____ **Date:** _____

15. Mrs. Belen wanted to bake 10 loaves of bread but realized she needed 1.75 kilograms more of flour. If she baked 7 loaves of bread, she would have 0.5 kilogram of flour left.

a. How much flour was needed for each loaf of bread?

b. Each kilogram of flour cost $0.90. How much would Mrs. Belen pay for all of the flour she needed to bake 10 loaves of bread?

Name: _____ Date: _____

Put on Your Thinking Cap!

Solve. Show your work.

1. A pile of 12 books is 1.2 meters thick. 9 of them are 9.5 centimeters thick each and the rest are of equal thickness. For the rest of the books, how thick is each of them in centimeters?

2. Charles and his 5 siblings buy a present for their mother on Mother's Day. As the eldest brother, Charles pays 0.2 of the cost of the present. The rest of his siblings pay the balance equally. Each sibling pays $9.50 less than Charles. What is the cost of the present?

Name: _____ **Date:** _____

3. The total capacity of 1 carton is the same as the total capacity of 2 identical cups. If 1.8 liters of water are needed to fill up 3 identical cups and 2 identical cartons, what is the capacity of a cup? Express your answer correct to 2 decimal places.

4. The total mass of 4 cartons of milk and 7 bottles of apple juice is 2.38 kilograms. The total mass of 2 cartons of milk and 3 bottles of apple juice is 1.1 kilograms. Find the mass of a carton of milk. Give your answer in kilograms.

Name: _____ **Date:** _____

5. At a cafe, Paul paid $12.50 for 2 cups of coffee and 2 cups of tea. The cost of each cup of tea was $\frac{2}{3}$ the cost of each cup of coffee.

a. How much did each cup of coffee cost?

b. How much did Paul's friend, Leon, pay for 2 cups of coffee and 1 cup of tea?

6. The mass of a can of orange juice is 0.16 kilogram heavier than the mass of a can of mango juice. The mass of 6 cans of orange juice is the same as the mass of 9 cans of mango juice.

a. What is the mass of each can of mango juice?

b. What is the mass of each can of orange juice?

Name: _____ **Date:** _____

7. Kerrie bought 5 notebooks and 5 pens. Devon bought 8 notebooks and 4 pens. They both paid the same amount. Each notebook cost $3.70 less than the cost of each pen.

a. What was the cost of each notebook?

b. What was the cost of each pen?

8. At a cafe, each chicken sandwich costs 0.8 times as much as each cheese sandwich. Daniel pays $46.15 for 9 chicken sandwiches and 7 cheese sandwiches.

a. What is the cost of each chicken sandwich?

b. What is the cost of each cheese sandwich?

Name: _____ **Date:** _____

9. James was given some alarm clocks and 30 patches to sell during a charity fund raising project. He was supposed to sell each alarm clock for $15.50 and each patch for $2.30. Instead, James worked out a plan in order to avoid accepting coins. He sold each clock for $16 and each patch for $2. James collected the same amount of money using the new prices as he would have with the old prices. How many alarm clocks did James sell?

Name: _____ **Date:** _____

10. Sarah saves $1.50 daily while Jessica saves $1 more than Sarah each day. Although Jessica started saving 10 days later than Sarah, she has now saved $12 more than Sarah.

a. How many days has Sarah been saving?

b. How much money has Jessica saved so far?

Name: _____ **Date:** _____

11. Albert went shopping with half of his monthly allowance. He spent $35.50 on a shirt and $\frac{3}{5}$ of the remainder on a book. He had $25.80 left after his shopping trip. What was Albert's monthly allowance?

Name: _____ **Date:** _____

12. Regina paid $12.50 for 4 chicken sandwiches and 3 apple pies. The cost of each apple pie was 0.75 the cost of each chicken sandwich. How much did each chicken sandwich cost?