Name: _____ Date: _____

Chapter 12 Conversion of Measurements

Practice 1 Length

Complete.

Example

6 m 55 cm = [6] m = 600 cm

6 m 55 cm = [55] cm

6 m 55 cm = 600 cm + 55 cm

= 655 cm

1.

7 m 70 cm = [ ] m = _____ cm

7 m 70 cm = [ ] cm

7 m 70 cm = _____ cm + _____ cm

= _____ cm

2.

8 m 1 cm = [ ] m = _____ cm

8 m 1 cm = [ ] cm

8 m 1 cm = _____ cm + _____ cm

= _____ cm

Write in centimeters.

3. 6 m 96 cm = _____ cm + _____ cm = _____ cm

4. 8 m 90 cm = _____ cm + _____ cm = _____ cm

5. 9 m 20 cm = _____ cm + _____ cm = _____ cm

6. 9 m 2 cm = _____ cm + _____ cm = _____ cm

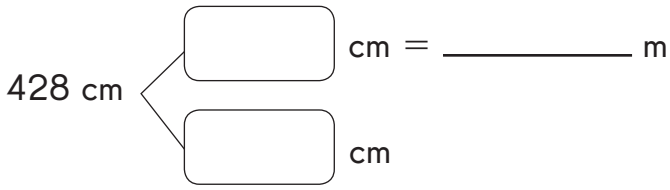
Complete.

Example

212 cm = 200 cm + 12 cm

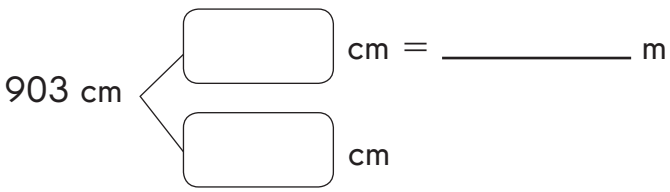
212 cm = 2 m 12 cm

7.



428 cm = _____ m _____ cm

8.



903 cm = _____ m _____ cm

Name: _____ **Date:** _____

Write in meters and centimeters.

9. 123 cm = _____ cm + _____ cm = _____ m _____ cm

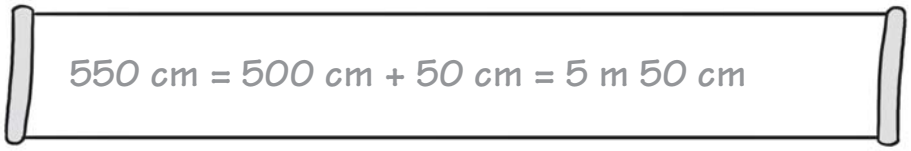
10. 390 cm = _____ cm + _____ cm = _____ m _____ cm

11. 365 cm = _____ cm + _____ cm = _____ m _____ cm

12. 909 cm = _____ cm + _____ cm = _____ m _____ cm

Fill in the blanks.
Color the banner with the longest measurement.

Example



13. 2 m 40 cm = _____ cm + _____ cm = _____ cm

14. 4 m 60 cm = _____ cm + _____ cm = _____ cm

15. 101 cm = _____ cm + _____ cm

= _____ m _____ cm

Color the boxes with equal measurements.

16. 5 m 5 cm | 55 cm | 550 cm | 505 cm

17. 9 m 9 cm | 990 cm | 909 cm | 9 cm + 900 cm

18. 100 cm + 30 cm | 130 cm | 1 m 3 cm | 1 m 30 cm

19. 300 cm + 67 cm | 3 m 67 cm | 367 cm | 67 cm + 300 m

Complete.

Example

7 km 111 m = 7 km + 111 m

7 km = 7,000 m

7 km 111 m = 7,000 m + 111 m

= 7,111 m

20.

5 km 26 m = ____ km + ____ m

____ km = ____ m

5 km 26 m = ____ m + ____ m

= ____ m

Name: _____ **Date:** _____

21.

8 km 8 m = ☐ km = _____ m

= ☐ m

8 km 8 m = _____ m + _____ m

= _____ m

Write in meters.

22. 5 km 505 m = _____ m + _____ m = _____ m

23. 8 km 500 m = _____ m + _____ m = _____ m

24. 8 km 50 m = _____ m + _____ m = _____ m

25. 9 km 5 m = _____ m + _____ m = _____ m

Complete.

Example

1,735 m = 1000 m = 1 km

= 735 m

1,735 m = 1 km + 735 m

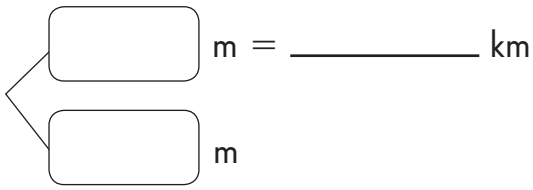
26.

3,056 m = ☐ m = _____ km

= ☐ m

3,056 m = _____ km _____ m

27.



6,009 m = _____ km _____ m

Write in kilometers and meters.

28. 2,050 m = _____ m + _____ m = _____ km _____ m

29. 7,900 m = _____ m + _____ m = _____ km _____ m

30. 9,090 m = _____ m + _____ m = _____ km _____ m

31. 9,009 m = _____ m + _____ m = _____ km _____ m

Fill in the blanks.

32. The length of a stapler is about 3 _____ long.

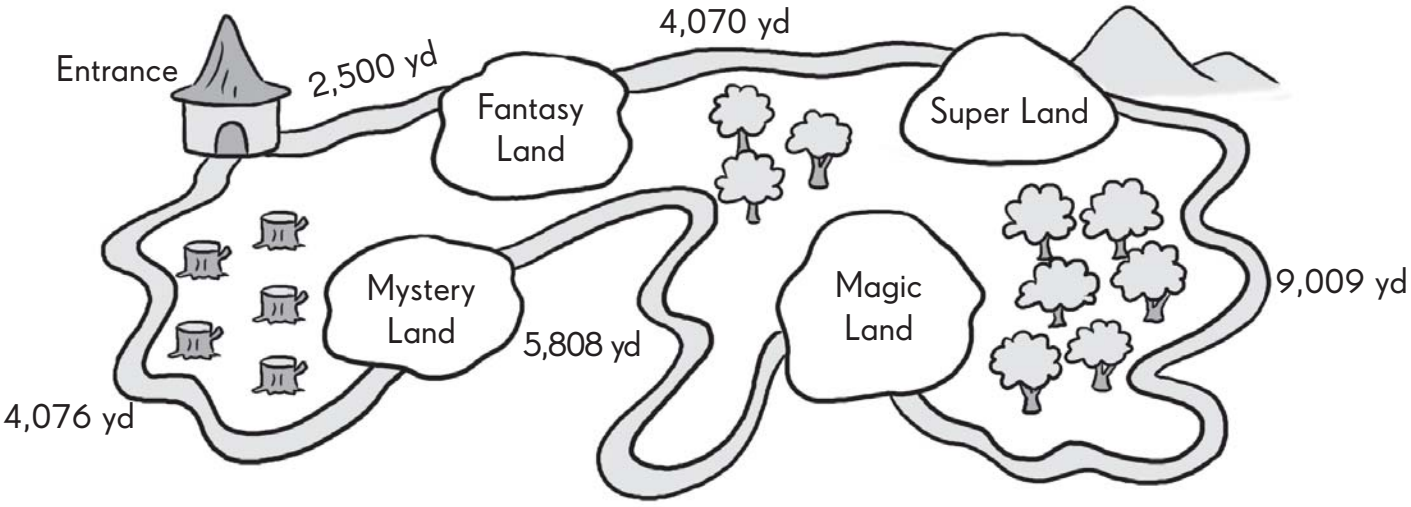
33. A shrub is about 4 _____ high.

34. A car took 3 hours to travel 100 _____.

Name: _____ **Date:** _____

Complete.

Jacob is at an amusement park. He wants to visit all four theme parks.
Find the length of each path he wants to take.



35. Super Land is _____ yards from Fantasy Land.

36. From _____ to Magic Land, Jacob has to travel the greatest distance between lands.

37. Magic Land is _____ miles _____ yards from Mystery Land.

38. Mystery Land is _____ miles _____ yards from the entrance.

Example

a. Convert feet to inches.

3 feet = 36 inches

1 foot → 12 inches

3 × 1 foot → 3 × 12 inches

→ 36 inches

b. Convert yards to feet.

8 yards = 24 feet

1 yard → 3 feet

8 × 1 yard → 8 × 3 feet

→ 24 feet

c. Convert miles to yards.

5 miles = 8,800 yards

1 mile → 1,760 yards

5 × 1 mile → 5 × 1,760 yards

→ 8,800 yards

d. Convert miles to feet.

4 miles = 21,120 feet

1 mile → 5,280 feet

4 × 1 mile → 4 × 5,280 feet

→ 21,120 feet

Name: _____ **Date:** _____

Convert larger units to smaller units.

39. $\frac{1}{2}$ ft = _____ in.

40. $\frac{2}{3}$ ft = _____ in.

41. $\frac{1}{6}$ ft = _____ in.

42. $\frac{2}{5}$ ft = _____ in.

43. $\frac{1}{4}$ ft = _____ in.

44. $\frac{1}{3}$ yd = _____ ft

45. $\frac{1}{2}$ yd = _____ ft

46. $\frac{2}{3}$ yd = _____ ft

47. 2 yd = _____ ft

48. $\frac{1}{2}$ mi = _____ ft

49. $\frac{3}{4}$ mi = _____ ft

50. $\frac{3}{8}$ mi = _____ ft

51. $\frac{7}{8}$ mi = _____ ft

52. $\frac{3}{5}$ mi = _____ yd

53. $\frac{7}{8}$ mi = _____ yd

54. $\frac{1}{4}$ mi = _____ yd

55. 4 mi = _____ yd

Example

a. 21 inches = 1 foot 9 inches

12 inches → 1 foot

21 ÷ 12 = 1 R 9

21 inches → 1 foot 9 inches

b. 17 feet = 5 yards 2 feet

3 feet → 1 yard

17 ÷ 3 = 5 R 2

15 feet → 5 yards 2 feet

c. 8,000 feet = 1 mile 2,720 feet

5,280 feet → 1 mile

8,000 − 5,280 = 2,720

8,000 feet → 1 mile 2,720 feet

d. 3,500 yards = 1 mile 1,740 yards

1,760 yards → 1 mile

3,500 − 1,760 = 1,740

3,500 → 1 mile 1,740 yards

Convert.

56. 40 inches = _____ feet _____ inches

57. 35 inches = _____ feet _____ inches

58. 18 inches = _____ feet _____ inches

59. 20 feet = _____ yards _____ feet

60. 36 feet = _____ yards _____ feet

61. 53 feet = _____ yards _____ feet

62. 6,000 feet = _____ miles _____ feet

63. 15,860 feet = _____ miles _____ feet

64. 3,600 feet = _____ miles _____ yards

65. 8,810 feet = _____ miles _____ yards

Name: _____ Date: _____

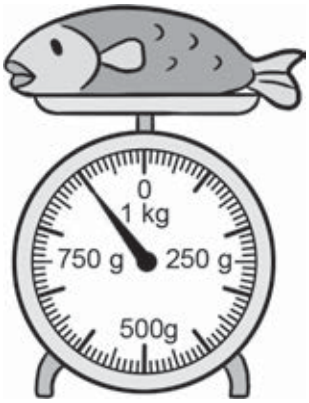
Practice 2 Measurement: Mass, Weight, and Volume

Read the scales. Write the mass in grams (g) or kilograms (kg).

1.

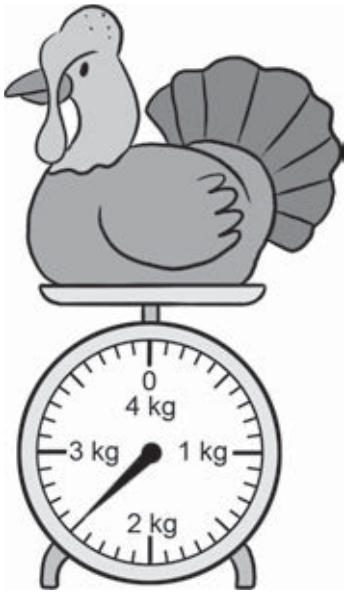
_____ kg

2.



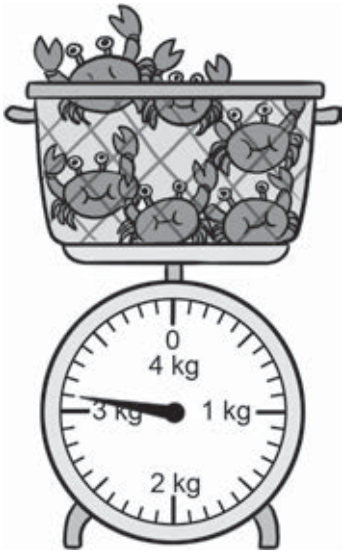
_____ g

3.



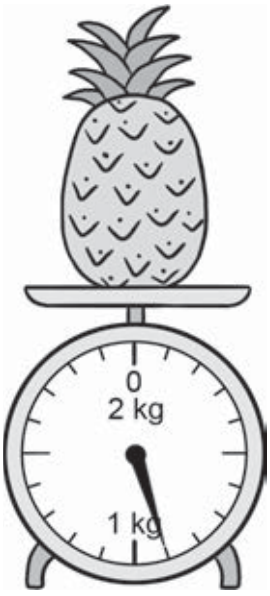
_____ kg _____ g

4.



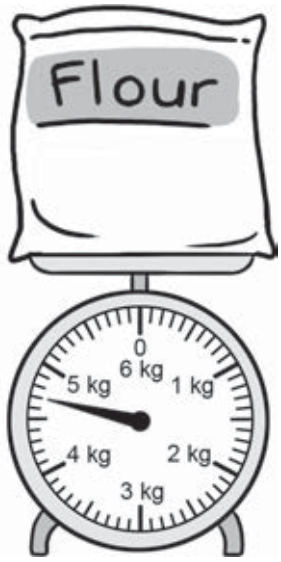
_____ kg _____ g

5.



_____ g

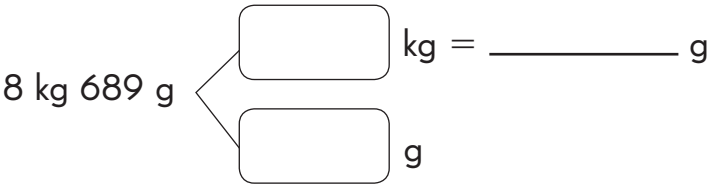
6.



_____ kg _____ g

Complete.

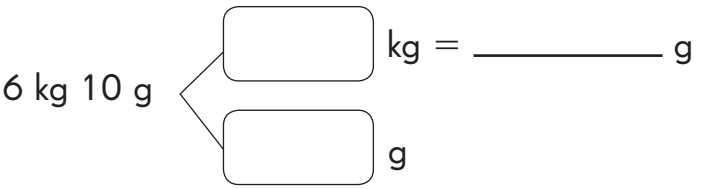
7.



8 kg 689 g = _____ g + _____ g

= _____ g

8.



6 kg 10 g = _____ g + _____ g

= _____ g

Write in grams.

9. 4 kg 740 g = _____ g + _____ g = _____ g

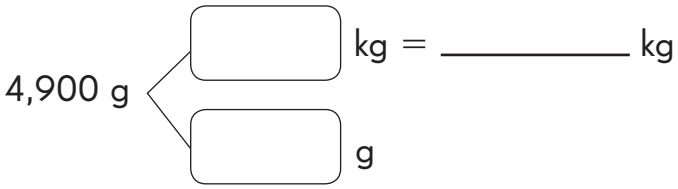
10. 5 kg 123 g = _____ g + _____ g = _____ g

11. 3 kg 40 g = _____ g + _____ g = _____ g

12. 6 kg 8 g = _____ g + _____ g = _____ g

Complete.

13.



4,900 g = _____ kg _____ g

Name: _____ **Date:** _____

14.

5,025 g = [ ] g = _____ kg

[ ] g

5,025 g = _____ kg _____ g

Write in kilograms and grams.

15. 1,890 g = _____ g + _____ g = _____ kg _____ g

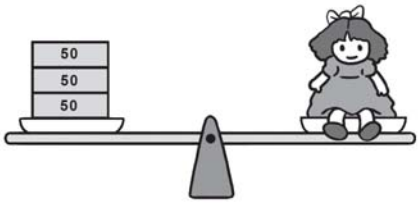
16. 6,600 g = _____ g + _____ g = _____ kg _____ g

17. 3,015 g = _____ g + _____ g = _____ kg _____ g

18. 4,008 g = _____ g + _____ g = _____ kg _____ g

Choose the unit that you would use to measure each.
Write *kilograms* or *grams*.

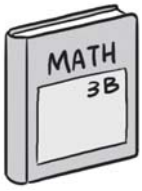
19.



The mass of the doll is about

150 _____.

20.



The mass of 10 math textbooks

is about 4 _____.

Convert larger unit to smaller unit.

Example

Convert pounds to ounces.

$5\frac{5}{8}$ lb = 90 oz

$5\frac{5}{8} = \frac{45}{8}$

1 lb → 16 oz

$5\frac{5}{8}$ lb → $\frac{45}{8} \times 16$

= 90 oz

Convert tons to pounds.

$1\frac{9}{10}$ tons = 3,800 lb

$1\frac{9}{10} = \frac{19}{10}$

1 ton → 2,000 lb

$1\frac{9}{10}$ tons → $\frac{19}{10} \times 2{,}000 = 3{,}800$ lb

Convert.

21. Choose any two of the following and convert to ounces.

$34\frac{1}{2}$ pounds	$3\frac{3}{8}$ pounds	$6\frac{3}{4}$ pounds
_____ ounces	_____ ounces	_____ ounces

Name: _____ **Date:** _____

22. Choose any two of the following and convert to pounds.

$\frac{7}{10}$ tons	15 tons	$\frac{1}{4}$ tons
_____ pounds	_____ pounds	_____ pounds

Convert larger units to smaller units.

23. 6 lb = _____ oz

24. 2 lb = _____ oz

25. 13 lb = _____ oz

26. 25 lb = _____ oz

27. $\frac{5}{8}$ lb = _____ oz

28. $\frac{1}{2}$ lb = _____ oz

29. $\frac{1}{4}$ lb = _____ oz

30. $\frac{1}{5}$ ton = _____ lb

31. $\frac{9}{10}$ ton = _____ lb

32. $\frac{3}{8}$ ton = _____ lb

33. 3 tons = _____ lb

34. 4 tons = _____ lb

35. 5 tons = _____ lb

36. 7 tons = _____ lb

Convert.

Example

a. 50 ounces = 3 pounds 2 ounces

16 oz → 1 lb

50 − 16 = 34
34 − 16 = 18
18 − 16 = 2

50 ounces → 3 pounds 2 ounces

b. 3,500 pounds = 1 ton 1,500 pounds

2,000 lb → 1 ton

3,500 − 2,000 = 1,500

3,500 pounds → 1 ton 1,500 pounds

37. Choose any two of the following and convert.

19 ounces	81 ounces	200 ounces
____ pound ____ ounces	____ pounds ____ ounce	____ pounds ____ ounces

38. Choose any two of the following and convert.

7,210 pounds	9,320 pounds	15,860 pounds
____ tons ____ pounds	____ tons ____ pounds	____ tons ____ pounds

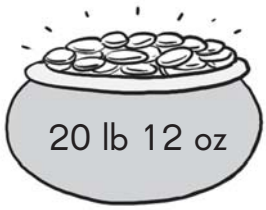
Name: _____ **Date:** _____

Match.

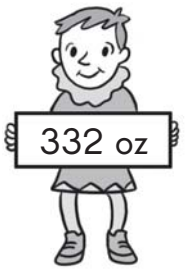
39.

•

•



40.



•

•

41.

•

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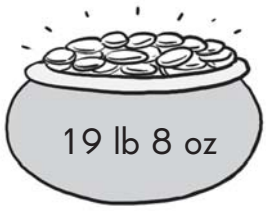
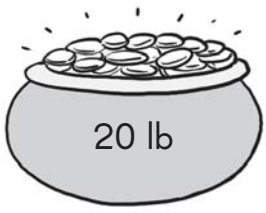


42.

•

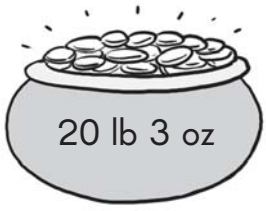
•



43.

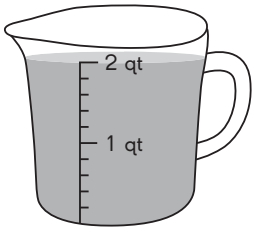
•

•



Find the volume of water in each measuring cup.

44.

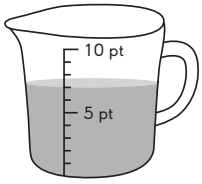


_____ qt

45.

_____ oz

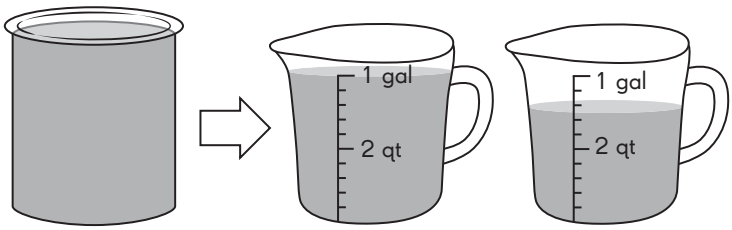
46.



_____ pt

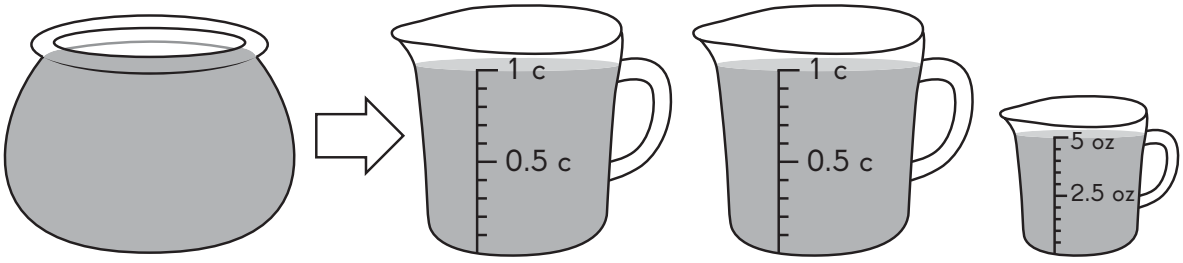
Water from each container is poured into each measuring container. Find the volume of the water in the containers.

47.



_____ gal _____ qt

48.



_____ c _____ oz

Name: _____ **Date:** _____

Converting larger unit to smaller unit.

Example

a. $\frac{3}{4}$ gallons = 3 quarts

1 gallon → 4 quarts

$\frac{3}{4} \times 4 \rightarrow 3$ quarts

b. 2 quarts = 4 pints

1 quart → 2 pints

$2 \times 2 \rightarrow 4$ pints

c. 5 pints = 10 cups

1 pint → 2 cups

$5 \times 2 \rightarrow 10$ cups

d. $\frac{1}{4}$ cup = 2 fluid ounces

1 cup → 8 fluid ounces

$\frac{1}{4} \times 8 = 2$ fluid ounces

Convert and match.

49. 3 gallons •

• 3 fluid ounces

50. $\frac{3}{8}$ cup •

• $1\frac{3}{5}$ cups

51. 9 pints •

• 18 cups

52. $\frac{1}{3}$ quart •

• 12 quarts

53. $\frac{2}{5}$ quart •

• $\frac{2}{3}$ pint

Convert smaller units to larger units.

Example

a. 15 quart = 3 gallons 3 quarts

1 gal → 4 qt

15 ÷ 4 = 3 R 3

15 quarts → 3 gallons 3 quarts

b. 39 pint = 19 quarts 1 pints

1 qt → 2 pt

39 ÷ 2 = 19 R 1

39 pints → 19 quarts 1 pint

c. 23 cups = 11 pints 1 cups

1 pt → 2 c

23 ÷ 2 = 11 R 1

23 cups → 11 pints 1 cup

d. 94 pints = 11 gallons 3 quarts

1 qt → 2 pt

94 ÷ 2 = 47

94 pt → 47 qt

1 gal → 4 qt

47 ÷ 4 = 11 R 3

47 quarts → 11 gallons 3 quarts

94 pints → 11 gallons 3 quarts

Name: _____ **Date:** _____

e. 57 pints = 7 gallons 0 quarts 1 pint

1 qt → 2 pt

57 ÷ 2 = 28 R 1

57 pt → 28 qt 1 pt

1 gal → 4 qt

28 ÷ 4 = 7

28 quarts → 7 gallons 0 quarts

57 pints → 7 gallons 0 quarts 1 pint

Convert.

54.

Qt	22	50	95
Gal and qt			

55.

Pt	19	71	153
Qt and pt			

56.

Qt	29	87	101
Pt and c			

57.

Pt	34	98	210
Gal and qt			

58.

Pt	17	53	115
Gal, qt, and pt			

Complete.

A teacher filled Containers A and B completely with water.

However, he had only enough water left to fill $\frac{1}{2}$ of Container C.

Find the volume of water in each container and the capacity of each container.

59.

Volume of water in Container A = _____ mL

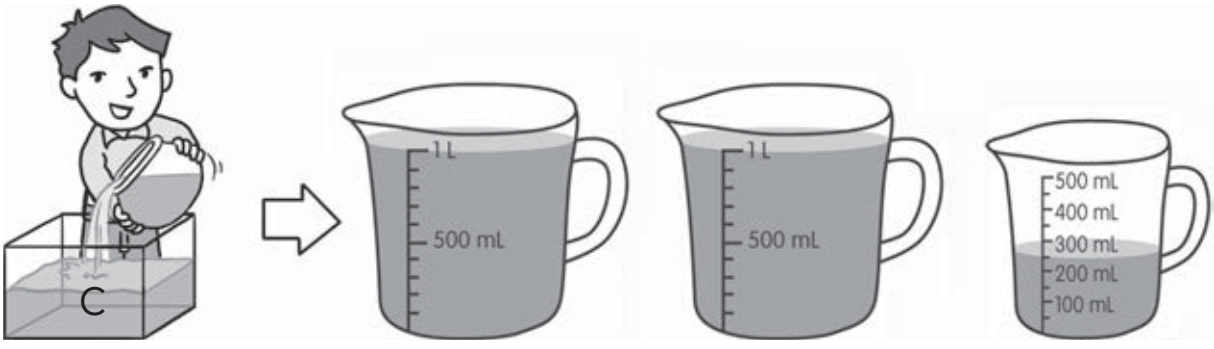
Capacity of Container A = _____ mL

60.

Volume of water in Container B = _____ mL

Capacity of Container B = _____ mL

61.



Volume of water in Container C = _____ L _____ mL

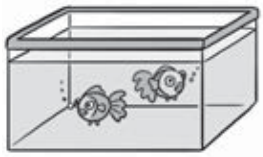
Capacity of Container C = _____ L _____ mL

Name: _____ **Date:** _____

Choose the unit you would use to measure each.
Write *liters* or *milliliters*.

62. 

A can of cranberry juice is about 300 _____.

63. 

The volume of water in a fish tank is about 10 _____.

Complete.

64. 1 L 400 mL = [ ] L = _____ mL
= [ ] mL

1 L 400 mL = _____ mL + _____ mL
= _____ mL

65. 5 L 60 mL = [ ] L = _____ mL
= [ ] mL

5 L 60 mL = _____ mL + _____ mL
= _____ mL

Write in milliliters.

66. 2 L 450 mL = _____ mL + _____ mL = _____ mL

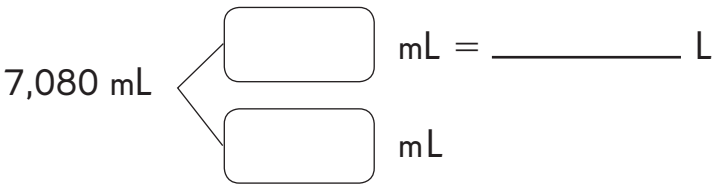
67. 1 L 105 mL = _____ mL + _____ mL = _____ mL

68. 2 L 45 mL = _____ mL + _____ mL = _____ mL

69. 3 L 9 mL = _____ mL + _____ mL = _____ mL

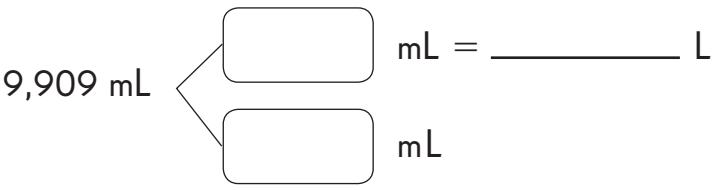
Complete.

70.



7,080 mL = _____ L _____ mL

71.



9,909 mL = _____ L _____ mL

Write in liters and milliliters.

72. 4,900 mL = _____ mL + _____ mL = _____ L _____ mL

73. 6,505 mL = _____ mL + _____ mL = _____ L _____ mL

74. 2,090 mL = _____ mL + _____ mL = _____ L _____ mL

75. 2,005 mL = _____ mL + _____ mL = _____ L _____ mL

Name: _____ Date: _____

Practice 3 Measurements: Time

Example

Convert minutes to seconds.

1 min → 60 sec

5 min → $5 \times 60 = 300$ sec

Convert hours to minutes.

2 h $= 2 \times 60 = 120$ min

Convert minutes (min) to seconds (sec).

1. 9 min = _____ sec

2. 10 min = _____ sec

3. 15 min = _____ sec

4. 3 min = _____ sec

5. $\frac{1}{6}$ min = _____ sec

6. $\frac{1}{3}$ min = _____ sec

7. $\frac{3}{5}$ min = _____ sec

Convert hours (h) to minutes.

8. 1 h = _____ min

9. 4 h = _____ min

10. 2 h = _____ min

11. 6 h = _____ min

12. $\frac{5}{6}$ h = _____ min

13. $\frac{1}{4}$ h = _____ min

14. $\frac{1}{3}$ h = _____ min

Convert larger units to smaller units.

Example

a. $\frac{2}{3}$ h = 40 min

1 h → 60 min

$\frac{2}{3}$ h × 60 = 40 min

b. 3 min = 180 sec

1 min → 60 sec

3 min → 180 sec

15. 2 h = _____ min

16. $\frac{5}{6}$ h = _____ min

17. $\frac{2}{3}$ h = _____ min

18. 3 min = _____ sec

19. 5 min = _____ sec

20. $\frac{2}{5}$ min = _____ sec

Name: _____ **Date:** _____

Converting smaller units to larger units.

Example

a. 305 min = 5 h 5 min

1 hour → 60 min

305 ÷ 60 = 5 R 5

305 min → 5 h 5 min

b. 94 sec = 1 min 34 sec

1 min → 60 sec

94 ÷ 60 = 1 R 34

94 sec → 1 min 34 sec

c. 10,935 sec = 3 h 2 min 15 sec

10,935 ÷ 60 = 182 R 15

10,935 sec = 182 min 15 sec

182 ÷ 60 = 3 R 2

182 min = 3 h 2 min

10,935 sec = 3 h 2 min 15 sec

Convert.

21. 82 min = _____ h _____ min

22. 200 min = _____ h _____ min

23. 411 min = _____ h _____ min

24. 78 sec = _____ min _____ sec

25. 163 sec = _____ min _____ sec

26. 1,312 sec = _____ min _____ sec

27. 3,860 sec = _____ h _____ min _____ sec

28. 18,632 sec = _____ h _____ min _____ sec

Name: _____ Date: _____

Practice 4 Real-World Problems: Measurement

Solve the word problems. Use line diagrams or bar models.

1. Two friends, Jim and Helen, ran a 12-km marathon. 20 minutes later and after running 950 meters, Helen sprained her ankle and had to discontinue the race. Jim stopped for 10 minutes to help her and then continued to complete the race in 1 hour 45 minutes.

a. How much farther did Jim run? (Give your answer in meters.)

b. How long did Jim take to complete the race in minutes?

c. If the marathan started at 8:15 A.M., at what time did Jim finish the race?

2. Jolie takes $\frac{1}{4}$ hour to iron a shirt with a steam iron. She takes $\frac{5}{12}$ hour to iron both a shirt and a dress.

a. How long does she take to iron a dress in minutes?

b. If she uses 0.2 liter of water for each shirt, how many shirts can she iron with 1 liter of water?

3. An apple weighs 150 grams. A watermelon weighs 10 times as much as the apple.

a. What is the mass of the watermelon?

b. What is the difference in mass between the apple and watermelon?

4. Caylene is 1.5 meters tall. Bally is 0.18 meter taller than her and 0.2 meter shorter than Tom. What is Tom's height in centimeters?

Name: _____ **Date:** _____

5. An egg weighs 5 ounces. Mrs. Sim used 4 eggs, a pound of flour, $\frac{1}{2}$ pound of sugar and $\frac{1}{4}$ pound of butter to make a cake. What is the total mass of all the ingredients in pounds and ounces?

6. A machine can fill 3 jugs with juice in 10 minutes. Each jug contains 1.5 liters of juice.

a. How many jugs can be filled in 1 hour?

b. How much juice is needed to fill all the jugs in 1 hour?

c. If each jug is sold at $6.30, how much will be earned if all the jugs filled in $\frac{1}{2}$ hour are sold?

7. Mrs. Lena uses 3 cups of milk and Mrs. Watson uses 19 fluid ounces of milk. Both of them are making waffles. They can make more waffles using more milk. Who makes more waffles?

8. Jason has 87 pints of water to water the garden and Mary has 7 gallons. Who has more water?

Name: _____ Date: _____

Put On Your Thinking Cap!

Challenging Practice

1. Ken peeled 3 kilograms of potatoes. His sister peeled 1,900 grams of potatoes.

a. Who peeled more? How much more? Give your answer in kilograms and grams.

b. If Ken's brother peeled 480 grams less than the sister, how many kilograms of potatoes were peeled altogether? Give your answer in kilograms and grams.

2. One dress needs 3 yards of material. Mrs. Carlton bought a material that was 7 feet 8 inches long. She wants to sew 2 such dresses. How much more material does she need? Give your answer in yards, feet, and inches.

Put On Your Thinking Cap!

Problem Solving

Starting at 7:50 P.M., Patrick worked for $\frac{1}{2}$ hour on a video, $\frac{1}{5}$ hour on another project, and went to sleep 3 hours after the last project. At what time did he sleep?