Name _____   Date _____

1. Complete the conversion table.

Distance	
71 km	_____ m
_____ km	30,000 m
81 m	_____ cm
_____ m	400 cm

2. 13 km 20 m = _____ m

3. 401 km 101 m − 34 km 153 m = _____

4. Gabe built a toy tower that measured 1 m 78 cm. After building some more, he measured it, and it was 82 cm taller. How tall is his tower now? Draw a tape diagram to model this problem. Use a simplifying strategy or an algorithm to solve, and write your answer as a statement.

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Lesson 1: Express metric length measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric length.

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1

Name _____   Date _____

1. Convert the measurements.

   a. 21 g 415 g = _____ g

   b. 2 kg 91 g = _____ g

   c. 87 kg 17 g = _____ g

   d. ____ kg _____ g = 96,020 g

Use a tape diagram to model the following problem. Solve using a simplifying strategy or an algorithm, and write your answer as a statement.

2. The table to the right shows the weight of three dogs. How much more does the Great Dane weigh than the Chihuahua?

Dog	Weight
Great Dane	59 kg
Golden Retriever	32 kg 48 g
Chihuahua	1,329 g

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Lesson 2: Express metric mass measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric mass.

2

Name _____   Date _____

1. Convert the measurements.

    a. 6 L 127 mL = _____ mL

    b. 706 L 220 mL = _____ mL

    c. 12 L 9 mL = _____mL

    d. _____ L _____ mL = 906,010 mL

2. 81 L 603 mL − 22 L 489 mL

Use a tape diagram to model the following problem. Solve using a simplifying strategy or an algorithm, and write your answer as a statement.

3. The Smith's hot tub has a capacity of 1,458 liters. Mrs. Smith put 487 liters 750 milliliters of water in the tub. How much water needs to be added to fill the hot tub completely?

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Lesson 3:   Express metric capacity measurements in terms of a smaller unit; model and solve addition and subtraction word problems involving metric capacity.

A

Correct _____

Write in meters and centimeters.

#	Problem			#	Problem		
1	3 m + 1 m =	m	cm	23	3 m 10 cm + 1 m 1 cm =	m	cm
2	4 m + 2 m =	m	cm	24	3 m 10 cm + 2 m 2 cm =	m	cm
3	2 m + 3 m =	m	cm	25	3 m 10 cm + 3 m 3 cm =	m	cm
4	5 m + 4 m =	m	cm	26	3 m 20 cm + 3 m 3 cm =	m	cm
5	2 m + 2 m =	m	cm	27	6 m 30 cm + 2 m 20 cm =	m	cm
6	3 m + 3 m =	m	cm	28	8 m 30 cm + 2 m 20 cm =	m	cm
7	4 m + 4 m =	m	cm	29	6 m 50 cm + 2 m 25 cm =	m	cm
8	5 m + 5 m =	m	cm	30	6 m 25 cm + 2 m 25 cm =	m	cm
9	5 m 7 cm + 1 m =	m	cm	31	4 m 70 cm + 1 m 10 cm =	m	cm
10	6 m 7 cm + 1 m =	m	cm	32	4 m 80 cm + 1 m 10 cm =	m	cm
11	7 m 7 cm + 1 m =	m	cm	33	4 m 90 cm + 1 m 10 cm =	m	cm
12	9 m 7 cm + 1 m =	m	cm	34	4 m 90 cm + 1 m 20 cm =	m	cm
13	9 m 7 cm + 1 cm =	m	cm	35	4 m 90 cm + 1 m 60 cm =	m	cm
14	5 m 7 cm + 1 cm =	m	cm	36	5 m 75 cm + 2 m 25 cm =	m	cm
15	3 m 7 cm + 1 cm =	m	cm	37	5 m 75 cm + 2 m 50 cm =	m	cm
16	3 m 7 cm + 3 cm =	m	cm	38	4 m 90 cm + 3 m 50 cm =	m	cm
17	6 m 70 cm + 10 cm =	m	cm	39	5 m 95 cm + 3 m 25 cm =	m	cm
18	6 m 80 cm + 10 cm =	m	cm	40	4 m 85 cm + 3 m 25 cm =	m	cm
19	6 m 90 cm + 10 cm =	m	cm	41	5 m 85 cm + 3 m 45 cm =	m	cm
20	6 m 90 cm + 20 cm =	m	cm	42	4 m 87 cm + 3 m 76 cm =	m	cm
21	6 m 90 cm + 30 cm =	m	cm	43	6 m 36 cm + 4 m 67 cm =	m	cm
22	6 m 90 cm + 60 cm =	m	cm	44	9 m 74 cm + 8 m 48 cm =	m	cm

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Lesson 4: Know and relate metric units to place value units in order to express measurements in different units.

4

Name _____   Date _____

1. Fill in the unknown unit in word form.

    a. 8,135 is 8 _____ 135 ones.   b. 8,135 kg is 8 _____ 135 g.

2. _____ mL is equal to 342 L 645 mL.

3. Compare using >, <, or =.

    a. 23 km 40 m   ◯   2,340 m

    b. 13,798 mL   ◯   137 L 980 mL
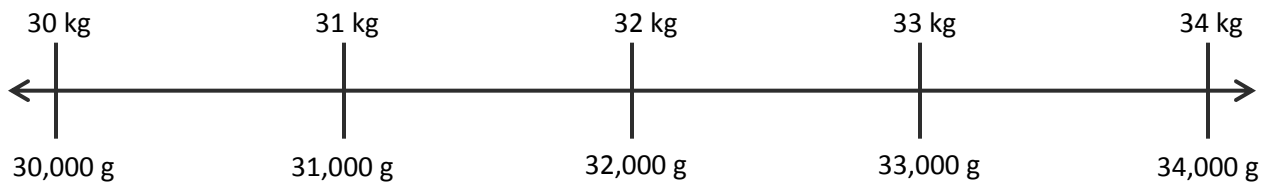
    c. 5,607 m   ◯   560,701 cm

4. Place the following measurements on the number line:

    33 kg 100 g   31,900 g   32,350 g   30 kg 500 g

30 kg   31 kg   32 kg   33 kg   34 kg

30,000 g   31,000 g   32,000 g   33,000 g   34,000 g

A

Correct _____

Write in kilograms and grams.

#		kg	g	#		kg	g
1	2,000 g =	kg	g	23	3,800 g =	kg	g
2	3,000 g =	kg	g	24	4,770 g =	kg	g
3	4,000 g =	kg	g	25	4,807 g =	kg	g
4	9,000 g =	kg	g	26	5,065 g =	kg	g
5	6,000 g =	kg	g	27	5,040 g =	kg	g
6	1,000 g =	kg	g	28	6,007 g =	kg	g
7	8,000 g =	kg	g	29	2,003 g =	kg	g
8	5,000 g =	kg	g	30	1,090 g =	kg	g
9	7,000 g =	kg	g	31	1,055 g =	kg	g
10	6,100 g =	kg	g	32	9,404 g =	kg	g
11	6,110 g =	kg	g	33	9,330 g =	kg	g
12	6,101 g =	kg	g	34	3,400 g =	kg	g
13	6,010 g =	kg	g	35	4,000 g + 2,000 g =	kg	g
14	6,011 g =	kg	g	36	5,000 g + 3,000 g =	kg	g
15	6,001 g =	kg	g	37	4,000 g + 4,000 g =	kg	g
16	8,002 g =	kg	g	38	8 x 7,000 g =	kg	g
17	8,020 g =	kg	g	39	49,000 g ÷ 7 =	kg	g
18	8,200 g =	kg	g	40	16,000 g x 5 =	kg	g
19	8,022 g =	kg	g	41	63,000 g ÷ 7 =	kg	g
20	8,220 g =	kg	g	42	17 x 4,000 g =	kg	g
21	8,222 g =	kg	g	43	13,000 g x 5 =	kg	g
22	7,256 g =	kg	g	44	84,000 g ÷ 7 =	kg	g

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Lesson 5: Use addition and subtraction to solve multi-step word problems involving length, mass, and capacity.

6

B   Improvement _____   # Correct _____

Write in kilograms and grams.

#	Problem	kg	g	#	Problem	kg	g
1	1,000 g =	kg	g	23	2,700 g =	kg	g
2	2,000 g =	kg	g	24	3,660 g =	kg	g
3	3,000 g =	kg	g	25	3,706 g =	kg	g
4	8,000 g =	kg	g	26	4,095 g =	kg	g
5	6,000 g =	kg	g	27	4,030 g =	kg	g
6	9,000 g =	kg	g	28	5,006 g =	kg	g
7	4,000 g =	kg	g	29	3,004 g =	kg	g
8	7,000 g =	kg	g	30	2,010 g =	kg	g
9	5,000 g =	kg	g	31	2,075 g =	kg	g
10	5,100 g =	kg	g	32	1,504 g =	kg	g
11	5,110 g =	kg	g	33	1,440 g =	kg	g
12	5,101 g =	kg	g	34	4,500 g =	kg	g
13	5,010 g =	kg	g	35	3,000 g + 2,000 g =	kg	g
14	5,011 g =	kg	g	36	4,000 g + 3,000 g =	kg	g
15	5,001 g =	kg	g	37	5,000 g + 4,000 g =	kg	g
16	7,002 g =	kg	g	38	9 x 8,000 g =	kg	g
17	7,020 g =	kg	g	39	64,000 g ÷ 8 =	kg	g
18	7,200 g =	kg	g	40	17,000 g x 5 =	kg	g
19	7,022 g =	kg	g	41	54,000 g ÷ 6 =	kg	g
20	7,220 g =	kg	g	42	18,000 g x 4 =	kg	g
21	7,222 g =	kg	g	43	14 x 5,000 g =	kg	g
22	4,378 g =	kg	g	44	96,000 g ÷ 8 =	kg	g

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Lesson 5: Use addition and subtraction to solve multi-step word problems involving length, mass, and capacity.

7

Name _____   Date _____

Model each problem with a tape diagram. Solve and answer with a statement.

1. Jeff places a pineapple with a mass of 890 grams on a balance scale.
    He balances the scale by placing two oranges, an apple, and a lemon
    on the other side. Each orange weighs 280 grams. The lemon weighs
    195 grams less than each orange. What is the mass of the apple?
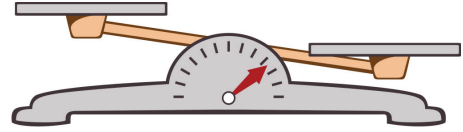
2. Brian is 1 meter 87 centimeters tall. Bonnie is 58 centimeters shorter than Brian. Betina is 26
    centimeters taller than Bonnie. How tall is Betina?

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Lesson 5:   Use addition and subtraction to solve multi-step word problems
involving length, mass, and capacity.

8

Name _____   Date _____

1. Complete the conversion charts.

Length	
3 km	_____ m
9 km	_____ m
6 km 435 m	_____ m
12 km 12 m	_____ m

Mass	
3 kg	_____ g
20 kg 300 g	_____ g
1 kg 74 g	_____ g
403 kg 4 g	_____ g

Capacity	
4 L	_____ mL
48 L 808 mL	_____ mL
2 L 20 mL	_____ mL
639 L 6 mL	_____ mL

2. A student completed the problem below. Check his work. Explain how you know if each solution is correct or incorrect.

Convert the following measurements:

a. 24 km = ___24,000___ m

b. 16 L = ___16,000___ mL

c. 38 kg = ___3,800___ g

3. Find the sum or difference.
   a. 493 km 43 m + 17 km 57 m

   b. 25 kg 32 g – 23 kg 83 g

   c. 100 L 99 mL + 2,999 mL

4. Billy is training for a half marathon. For the problems below, use tape diagrams, numbers, and words to explain each answer.

    a. Each day, Billy runs on the treadmill for 5 kilometers and runs on the outdoor track for 6,000 meters. In all, how many meters does Billy run each day?

    b. Since Billy has started training, he has also been drinking more water. On Saturday, he drank 2 liters 755 milliliters of water. On Sunday, he drank some more. If Billy drank a total of 4 liters 255 milliliters of water on Saturday and Sunday, how many milliliters of water did Billy drink on Sunday?

    c. Since he began exercising so much for his half marathon, Billy has been losing weight. In his first week of training, he lost 2 kilograms 530 grams. In the following two weeks of training, he lost 1 kilogram 855 grams each week. Billy now weighs 61 kilograms 760 grams. What was Billy's weight, in grams, before he started training? Explain your thinking.