

Grade 4 · Measurement Conversions and Word Problems · Worksheet Answer Key

Common Core 4.MD.A.1, 4.MD.A.2 · mathovore.fr

This answer key shows every step for the 24 measurement problems. Check each conversion by asking whether the smaller unit gave a bigger number, and use the number line and table figures to see the patterns.

Grade 4 Common Core: 4.MD.A.1 · 4.MD.A.2

Problem 1: Meters to centimeters

- a. $3 \text{ m} = 3 \times 100 = 300 \text{ cm}$
- b. $7 \text{ m} = 7 \times 100 = 700 \text{ cm}$
- c. $12 \text{ m} = 12 \times 100 = 1,200 \text{ cm}$
- d. $25 \text{ m} = 25 \times 100 = 2,500 \text{ cm}$

Check: **300 cm, 700 cm, 1,200 cm, 2,500 cm.**

Problem 2: Kilometers to meters

- a. $2 \text{ km} = 2 \times 1000 = 2,000 \text{ m}$
- b. $6 \text{ km} = 6 \times 1000 = 6,000 \text{ m}$
- c. $9 \text{ km} = 9 \times 1000 = 9,000 \text{ m}$
- d. $15 \text{ km} = 15 \times 1000 = 15,000 \text{ m}$

Check: **2,000 m, 6,000 m, 9,000 m, 15,000 m.**

Problem 3: Kilograms to grams

- a. $4 \text{ kg} = 4 \times 1000 = 4,000 \text{ g}$
- b. $8 \text{ kg} = 8 \times 1000 = 8,000 \text{ g}$
- c. $13 \text{ kg} = 13 \times 1000 = 13,000 \text{ g}$
- d. $20 \text{ kg} = 20 \times 1000 = 20,000 \text{ g}$

Check: **4,000 g, 8,000 g, 13,000 g, 20,000 g.**

Problem 4: Liters to milliliters

- a. $5 \text{ L} = 5 \times 1000 = 5,000 \text{ mL}$
- b. $9 \text{ L} = 9 \times 1000 = 9,000 \text{ mL}$

c. $11 \text{ L} = 11 \times 1000 = 11,000 \text{ mL}$

d. $30 \text{ L} = 30 \times 1000 = 30,000 \text{ mL}$

Check: **5,000 mL, 9,000 mL, 11,000 mL, 30,000 mL.**

Problem 5: Pounds to ounces

a. $2 \text{ lb} = 2 \times 16 = 32 \text{ oz}$

b. $5 \text{ lb} = 5 \times 16 = 80 \text{ oz}$

c. $8 \text{ lb} = 8 \times 16 = 128 \text{ oz}$

d. $10 \text{ lb} = 10 \times 16 = 160 \text{ oz}$

Check: **32 oz, 80 oz, 128 oz, 160 oz.**

Problem 6: Hours to minutes

a. $3 \text{ hr} = 3 \times 60 = 180 \text{ min}$

b. $6 \text{ hr} = 6 \times 60 = 360 \text{ min}$

c. $8 \text{ hr} = 8 \times 60 = 480 \text{ min}$

d. $12 \text{ hr} = 12 \times 60 = 720 \text{ min}$

Check: **180 min, 360 min, 480 min, 720 min.**

Problem 7: Minutes to seconds

a. $2 \text{ min} = 2 \times 60 = 120 \text{ sec}$

b. $5 \text{ min} = 5 \times 60 = 300 \text{ sec}$

c. $9 \text{ min} = 9 \times 60 = 540 \text{ sec}$

d. $10 \text{ min} = 10 \times 60 = 600 \text{ sec}$

Check: **120 sec, 300 sec, 540 sec, 600 sec.**

Problem 8: Complete the table

Multiply each number of meters by 100.

Meters (m)	Centimeters (cm)
2	200
5	500
9	900
14	1,400

The pattern: centimeters = meters $\times$ 100.

200, 500, 900, 1,400

Problem 9: Mixed units to one unit

- a. $3 \times 1,000 = 3,000$; $3,000 + 250 = 3,250$ m
- b. $5 \times 100 = 500$; $500 + 40 = 540$ cm
- c. $2 \times 1,000 = 2,000$; $2,000 + 500 = 2,500$ g
- d. $4 \times 16 = 64$; $64 + 6 = 70$ oz

3,250 m; 540 cm; 2,500 g; 70 oz

Problem 10: Hours, minutes, seconds

- a. $2 \times 60 + 30 = 150$ min
- b. $60 + 45 = 105$ min
- c. $3 \times 60 + 10 = 190$ min
- d. $5 \times 60 + 20 = 320$ sec

150 min; 105 min; 190 min; 320 sec

Problem 11: Fractions of a unit

- a. Half of 1,000 m is 500 m
- b. One fourth of 1,000 g is 250 g
- c. One fourth of 60 min is 15 min, so three fourths is $3 \times 15 = 45$ min
- d. Half of 1,000 mL is 500 mL
- e. One fourth of 100 cm is 25 cm

500 m; 250 g; 45 min; 500 mL; 25 cm

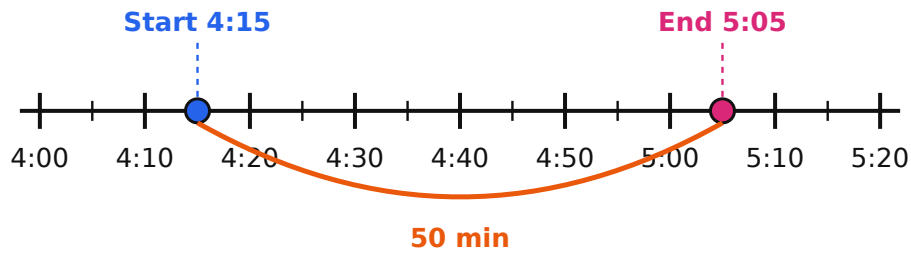
Problem 12: Compare measurements

- a. $3 \text{ m} = 300 \text{ cm}$, and 300 is greater than 290: $3 \text{ m} > 290 \text{ cm}$
- b. $2 \text{ kg} = 2,000 \text{ g}$, and 2,000 is less than 2,500: $2 \text{ kg} < 2,500 \text{ g}$
- c. $5 \text{ L} = 5,000 \text{ mL}$: $5 \text{ L} = 5,000 \text{ mL}$
- d. $2 \text{ hr} = 120 \text{ min}$, and 120 is greater than 100: $2 \text{ hr} > 100 \text{ min}$

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Problem 13: Elapsed time on a number line

From 4:15 jump 45 minutes to 5:00, then 5 more minutes to 5:05.

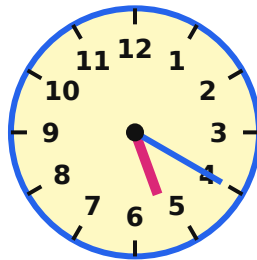


The jump from 4:15 to 5:05 is 50 minutes.

$45 + 5 = 50$. **The practice lasts 50 minutes.**

Problem 14: Elapsed time on a clock

The clock shows 4:35. From 4:35 to 5:00 is 25 minutes. From 5:00 to 5:20 is 20 minutes.

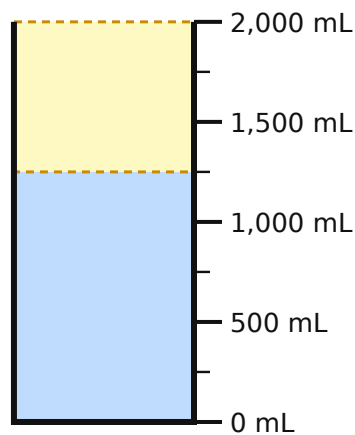


The finish time, 5:20.

$25 + 20 = 45$. **Jamal works 45 minutes.**

Problem 15: Reading a measuring jug

The water is at 1,250 mL. A full jug is 2 L = 2,000 mL.



The dashed part is the 750 mL still needed.

$2,000 - 1,250 = 750$. **Mei needs 750 mL more.**

Problem 16: Cheese and change

Cost: $3 \times \$6 = \$18$.

Change: $\$20 - \$18 = \$2$.

Priya gets \$2 in change.

Problem 17: Morning runs

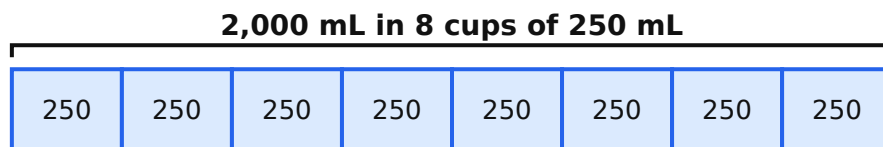
One run: $2 \times 1,000 + 400 = 2,400$ m.

Five runs: $5 \times 2,400 = 12,000$ m.

Diego runs 12,000 m.

Problem 18: Lemonade cups

Change liters to milliliters: $2 \times 1,000 = 2,000$ mL.



Eight cups of 250 mL.

$2,000 \div 250 = 8$. **She fills 8 cups.**

Problem 19: Movie night

Add 2 hours: $6:40 + 2 \text{ hr} = 8:40$. Add 25 minutes: 8:40 to 9:00 is 20 minutes, and 5 more minutes make 9:05.

The movie ends at 9:05 p.m.

Problem 20: Backpack mass

Backpack: $3 \times 1,000 + 200 = 3,200$ g.

Total: $3,200 + 450 = 3,650$ g.

The total mass is 3,650 g.

Problem 21: Biking distance

Monday: $3 \text{ km} = 3,000 \text{ m}$.

Total: $3,000 + 2,500 = 5,500 \text{ m}$.

Since $5,500 = 5,000 + 500$, that is 5 km 500 m.

5,500 m, or 5 km 500 m.

Problem 22: Baking batches

Bag: $5 \times 16 = 80 \text{ oz}$.

$80 \div 12 = 6$ with remainder 8, because $6 \times 12 = 72$ and $80 - 72 = 8$.

6 full batches, with 8 oz left.

Problem 23: Farmers market

8 oz is half of a pound, so the weight is $2\frac{1}{2} \text{ lb}$.

Two pounds cost $2 \times \$2 = \$4$. Half a pound costs $\$2 \div 2 = \$1$.

Total: $\$4 + \$1 = \$5$. **Maya pays \$5.**

Problem 24: Swim laps

Seconds: $4 \times 90 = 360 \text{ sec}$.

Minutes: $360 \div 60 = 6$.

Mei swims 6 minutes.