LESSON MAKER PRO

Precision in Place

Report distances as accurately as the measurements allow.

HIGH SCHOOL · MT.CORE.ALG.MOD.4

MT.CORE.ALG.MOD.4 "Choose a level of accuracy appropriate to limitations on measurement when reporting quantities in modeling situations. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities."

NAME _____ DATE _____

THE BIG IDEA

When you add or subtract measurements, round the result to the place of the least precise measurement. A length measured to the nearest meter does not support a total reported to tenths of a meter.

WORKED EXAMPLE

Two walkway sections have the measured lengths shown. Report their total at an appropriate accuracy.

WALKWAY MEASUREMENTS

Section	Length	Measured to
A	24 m	nearest 1 m
B	17.6 m	nearest 0.1 m

1. Add: 24 + 17.6 = 41.6 m.
2. The least precise measurement is to the nearest meter.
3. Round 41.6 m to the nearest meter.

Answer: 42 m

PRACTICE 4 problems

1 Two ribbons measure 13 m (nearest 1 m) and 8.4 m (nearest 0.1 m). Report their total appropriately.

ANSWER _____

2 Two trail sections measure 38 m (nearest 1 m) and 14.7 m (nearest 0.1 m). Subtract the shorter length from the longer. Give the rounded difference and the place used.

ANSWER _____

3 A 1.3 m strip (nearest 0.1 m) is cut from a 4.26 m banner (nearest 0.01 m). Report the length left appropriately.

ANSWER _____

4 A route has legs of 130 m (nearest 10 m) and 87 m (nearest 1 m). Report the total appropriately.

ANSWER _____

APPLY IT Show your work

1 For a community cleanup near Salish Kootenai College, students measure two trail sections: 0.8 km (nearest 0.1 km) and 0.36 km (nearest 0.01 km). Report the total route length appropriately.

WORK SPACE

ANSWER _____

2 For a school bike ride, d(x) = x + 1.1 gives the total distance in kilometers after a final 1.1 km leg measured to the nearest 0.1 km. If x = 2.45 km is measured to the nearest 0.01 km, report d(2.45) appropriately.

WORK SPACE

ANSWER _____

CHALLENGE One step up

For a Montana community fun run, r(x) = 5.0 - x gives the remaining distance in kilometers. The full route is measured to the nearest 0.1 km, and x = 1.275 km is measured to the nearest 0.001 km. Report r(1.275) appropriately. Explain your choice.

WORK SPACE AND ANSWER

Precision in Place

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Two ribbons measure 13 m (nearest 1 m) and 8.4 m (nearest 0.1 m). Report their total appropriately.	**21 m**
2	Two trail sections measure 38 m (nearest 1 m) and 14.7 m (nearest 0.1 m). Subtract the shorter length from the longer. Give the rounded difference and the place used.	**23 m; nearest meter**
3	A 1.3 m strip (nearest 0.1 m) is cut from a 4.26 m banner (nearest 0.01 m). Report the length left appropriately.	**3.0 m**
4	A route has legs of 130 m (nearest 10 m) and 87 m (nearest 1 m). Report the total appropriately.	**220 m**

PART 2 · APPLY IT

1. **1.2 km** Add to get 1.16 km. Round to the nearest 0.1 km.
2. **3.6 km** Calculate 2.45 + 1.1 = 3.55 km. Round to the nearest 0.1 km.

CHALLENGE

3.7 km. The calculation gives 3.725 km, but the full route was measured only to the nearest 0.1 km.

Keep trailing zeros that show the reported precision, such as 3.0 m. For explanations, accept any clear reference to the least precise measurement.