Comparing Decimals

Apply the skill to decisions and designs

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Compare ones, tenths, then hundredths. A final zero may help: $0.2 = 0.20$. The first place with different digits decides the order. More written digits do not automatically mean a larger value.

Worked example

Compare 0.48 and 0.5.

1. Write both to hundredths: 0.48 and 0.50. Adding a final zero does not change a value.
2. The ones match: $0 = 0$.
3. The first different digits are in tenths: $4 < 5$. Smaller places cannot reverse that result.
4. Therefore $0.48 < 0.5$.
Answer: $0.48 < 0.5$.

Practice Problems

Show your thinking.

1. A race qualifier must finish in less than 1.10 minutes. Lee took 1.09, Maya 1.1, and Sol 1.12 minutes. Who qualifies? Explain the boundary.

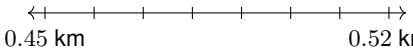
2. A scale sorts parcels as light (under 0.5 kg) or regular (at least 0.5 kg). Sort 0.49, 0.5, 0.05, and 0.51 kg.

3. Two paint samples use 0.7 L and 0.70 L. A third uses 0.67 L. How many different volumes are there? List them from smallest to largest.

4. A ribbon label is $1.d4$ m, where d is one digit. Find every d that makes the length at least 1.35 m and less than 1.55 m.

5. A printer put the decimal point in the wrong place and labeled a 98-hundredths-of-a-meter mark as 9.8 m. Is the intended mark before or after 1.00 m? Write its correct decimal.

6. The left path ends at 0.46 km and the right path at 0.5 km. Mark both on the line, then give the fewest hundredths of a kilometer to add to the left path so they tie.



7. A container needs exactly 0.75 L. A measuring jug has marks only at whole tenths of a liter. Name the two neighboring marks and say if either is exact.

8. A garden label needs a length ending in digit 8 in the hundredths place. Give a length that is greater than 0.3 m but less than 0.49 m. Are there two possible answers?

Answer Key

1. Lee only.
2. Light: $0.49, 0.05$ kg. Regular: $0.5, 0.51$ kg.
3. Two volumes: 0.67 L, then 0.70 L.
4. $d = 4$ or 5: 1.44 m or 1.54 m.
5. Before 1.00 m; correct label 0.98 m.
6. Add 4 hundredths of a kilometer (0.04 km).
7. 0.7 L and 0.8 L; neither is exact.
8. Yes: 0.38 m and 0.48 m.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $1.09 < 1.10$: at the tenths place, $0 < 1$, so Lee qualifies.

2. $1.1 = 1.10$, not less; Maya does not qualify.

3. $1.12 > 1.10$: Sol has more hundredths after the ones and tenths match.

Problem 2

1. The cutoff is 0.50 kg, or 50 hundredths of a kilogram.

2. 49 and 5 hundredths are below 50.

3. 50 meets the cutoff exactly and 51 exceeds it.

Problem 3

1. $0.7 = 0.70$: seven tenths is seventy hundredths.

2. 0.67 L is 67 hundredths of a liter, less than 70 hundredths.

3. Keep one entry for the equal pair, so the order is $0.67 < 0.70$ L.

Problem 4

1. With $d = 3$, the length is 1.34 m, below 1.35 m. Smaller digits also fail.

2. $d = 4$ gives 1.44 m and $d = 5$ gives 1.54 m. Both fit the range.

3. $d = 6$ gives 1.64 m, above the upper limit, and larger digits do too.

Problem 5

1. 98 hundredths is 0 ones, 9 tenths, and 8 hundredths: 0.98 m.

2. 1.00 m is 100 hundredths of a meter, and $98 < 100$.

3. 9.8 m instead has 9 whole meters, so it is after the 1-meter mark.

Problem 6

1. Each tick adds 0.01 km. Mark the left path one tick after 0.45 km, at 0.46 km.

2. Mark the right path at 0.50 km. Count four steps from 0.46: $0.47, 0.48, 0.49, 0.50$.

3. $50 - 46 = 4$ hundredths of a kilometer brings the left path to the same distance.

Problem 7

1. In hundredths, the neighboring tenths are 70 and 80.

2. $70 < 75 < 80$, so the target lies between the marks.

3. Neither mark is 75 hundredths of a liter.

Problem 8

1. With an 8 in hundredths, the nearby choices are $0.28, 0.38, 0.48, 0.58$ m.

2. $0.28 < 0.30 < 0.38 < 0.48 < 0.49 < 0.58$.

3. Only 0.38 m and 0.48 m fit both strict limits.

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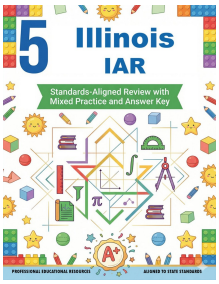

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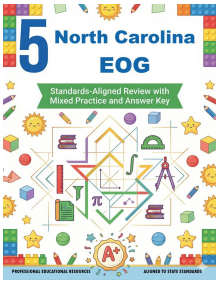

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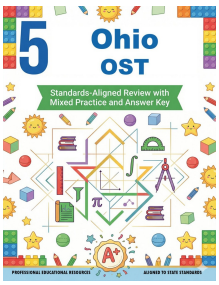

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