Rounding Decimals

Rounding Decimals: Models and Computation

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

QUICK REVIEW

Find the two neighboring benchmarks for the requested place. Choose the closer one; at the midpoint choose the greater one. For hundredths, 4.376 is between 4.37 and 4.38, above midpoint 4.375, so it rounds to 4.38.

Worked example

Round 4.583 to the nearest hundredth.

1. The neighboring benchmarks are 4.58 and 4.59; their midpoint is 4.585.

2. 4.583 is below the midpoint, so choose the lower benchmark, 4.58.

Answer: 4.58.

Practice Problems

Show your thinking.

1. Round 6.384 to the nearest hundredth.

2. Locate 2.65 between its neighboring tenth benchmarks and round to the nearest tenth.

3. Round 8.49 to the nearest whole number.

4. A rope measures 3.047 m. Record its length to the nearest hundredth of a meter.

5. A student rounds 9.95 to 9.9 by always deleting digits. Is that result correct to the nearest tenth?

6. Would 0.804 be reported as 0.8 when rounded to the nearest tenth? Show the benchmarks.

7. Round 12.746 to both tenths and hundredths.

8. Does rounding 3.099 to hundredths require regrouping? Give the result.

Answer Key

1. 6.38.
2. 2.7.
3. 8.
4. 3.05 m.
5. 10.0.
6. 0.8.
7. 12.7 and 12.75.
8. Yes; 3.10.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The neighboring benchmarks are 6.38 and 6.39; their midpoint is 6.385.

2. 6.384 is below the midpoint, so choose the lower benchmark, 6.38.

Problem 2

1. The neighboring benchmarks are 2.6 and 2.7; their midpoint is 2.65.

2. 2.65 is at or above the midpoint, so choose the upper benchmark, 2.7.

Problem 3

1. The neighboring benchmarks are 8 and 9; their midpoint is 8.5.

2. 8.49 is below the midpoint, so choose the lower benchmark, 8.

Problem 4

1. The neighboring benchmarks are 3.04 and 3.05; their midpoint is 3.045.

2. 3.047 is at or above the midpoint, so choose the upper benchmark, 3.05.

Problem 5

1. The neighboring benchmarks are 9.9 and 10.0; their midpoint is 9.95.

2. 9.95 is at or above the midpoint, so choose the upper benchmark, 10.0.

Problem 6

1. The neighboring benchmarks are 0.8 and 0.9; their midpoint is 0.85.

2. 0.804 is below the midpoint, so choose the lower benchmark, 0.8.

Problem 7

1. For tenths, the hundredths digit $4 < 5$, so $12.746 \approx 12.7$.

2. For hundredths, the thousandths digit $6 \geq 5$, so $12.746 \approx 12.75$.

Problem 8

1. The hundredth benchmarks are 3.09 and 3.10, with midpoint 3.095.

2. $3.099 > 3.095$, so choose 3.10; ten hundredths regroup as one tenth.

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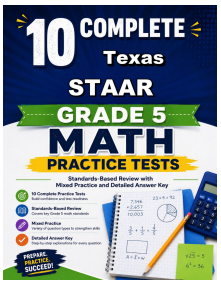

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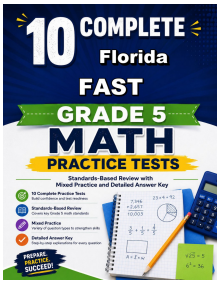

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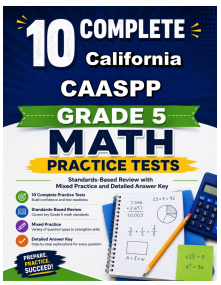

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