Decimal Operations

Decimal operations: Applications and decisions

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

QUICK REVIEW

For addition/subtraction align decimal places: $3.40 - 1.75 = 1.65$. For multiplication count decimal places: $1.2 \times 0.4 = 0.48$. For division multiply both numbers by the same power of ten: $4.8/0.6 = 48/6 = 8$. Estimate first to check the size.

Worked example

Compute $6.3 \div 0.7$.

1. Multiply both numbers by 10: $6.3 \div 0.7 = 63 \div 7$.
2. 9 groups use $9 \times 7 = 63$, leaving $63 - 63 = 0$.
3. Nothing is left, so the quotient is 9.
4. Check $9 \times 0.7 = 6.3$.

Answer: 9.

Practice Problems

Show your thinking.

1. Share 16.5 liters equally among 3 containers. Find liters each.

2. A route has legs of 2.75 km and 4.6 km. Find total km.

3. Pay 8.65 dollars with 15 dollars. Find change in dollars.

4. A 3.2-kg parcel costs 1.25 dollars per kg. Find shipping cost in dollars.

5. A 6.3-m ribbon is cut into 0.45-m pieces. How many pieces?

6. A rectangular tile is 0.9 m by 0.8 m. A label says 7.2 square m. Correct it.

7. Two walking routes are 1.85 km and 2.6 km. Find total km.

8. Design equal 0.6-L pours from 8.4 L. How many pours?

Answer Key

1. 5.5 L per container.
2. 7.35 km.
3. 6.35 dollars.
4. 4 dollars.
5. 14 pieces.
6. 0.72 square meters.
7. 4.45 km.
8. 14 pours.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Multiply both numbers by 10: $16.5 \div 3 = 165 \div 30$.
2. 5 groups use $5 \times 30 = 150$, leaving $165 - 150 = 15$.
3. The leftover is $15/30 = 0.5$ of one group, so the result is 5.5.
4. Check $5.5 \times 3 = 16.5$.
5. In the context, the result is 5.5 L per container.

Problem 2

1. Align the decimal points: write 2.75 and 4.60 to the same decimal place.
2. In hundredths, $275 + 460 = 735$.
3. Rename: 735 hundredths is 7.35, since $735 \div 100 = 7.35$.
4. In the context, the result is 7.35 km.

Problem 3

1. Align the decimal points: write 15.00 and 8.65 to the same decimal place.
2. In hundredths, $1500 - 865 = 635$.
3. Rename: 635 hundredths is 6.35, since $635 \div 100 = 6.35$.
4. In the context, the result is 6.35 dollars.

Problem 4

1. Write $3.2 = 32/10$ and $1.25 = 125/100$.
2. Multiply the whole counts: $32 \times 125 = 4000$.
3. The combined scale is $10 \times 100 = 1000$. Therefore $4000/1000 = 4$.
4. In the context, the result is 4 dollars.

Problem 5

1. Multiply both numbers by 100: $6.3 \div 0.45 = 630 \div 45$.
2. 14 groups use $14 \times 45 = 630$, leaving $630 - 630 = 0$.
3. Nothing is left, so the quotient is 14.
4. Check $14 \times 0.45 = 6.3$.
5. In the context, the result is 14 pieces.

Problem 6

1. Write $0.9 = 9/10$ and $0.8 = 8/10$.
2. Multiply the whole counts: $9 \times 8 = 72$.
3. The combined scale is $10 \times 10 = 100$. Therefore $72/100 = 0.72$.
4. In the context, the result is 0.72 square meters.

Problem 7

1. Align the decimal points: write 1.85 and 2.60 to the same decimal place.
2. In hundredths, $185 + 260 = 445$.
3. Rename: 445 hundredths is 4.45, since $445 \div 100 = 4.45$.
4. In the context, the result is 4.45 km.

Problem 8

1. Multiply both numbers by 10: $8.4 \div 0.6 = 84 \div 6$.
2. 14 groups use $14 \times 6 = 84$, leaving $84 - 84 = 0$.
3. Nothing is left, so the quotient is 14.
4. Check $14 \times 0.6 = 8.4$.
5. In the context, the result is 14 pours.

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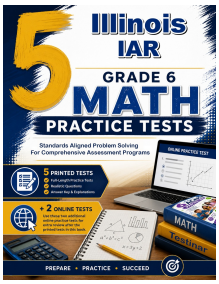

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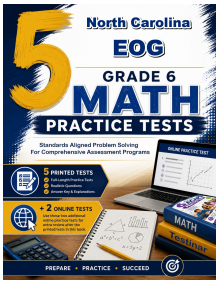

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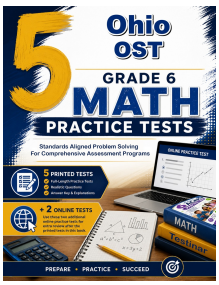

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