Compute with Integers in Context

Computing with integers in context: Mistakes and missing information

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Choose signs from the context, then keep units through all operations. A balance of -10 dollars plus 3 deposits of 6 dollars is $-10 + 3 \times 6 = 8$ dollars. A -24-m change over 6 minutes is $-24/6 = -4$ m/minute. Distinguish a signed change from a nonnegative distance.

Worked example

A diver starts at -5 m and descends 3 m/min for 4 min. Find final elevation.

1. Total change $= 4 \times (-3) = -12$ m.
2. Final elevation $= -5 + (-12) = -17$ m.
Answer: -17 m.

Practice Problems

Show your thinking.

1. A student computes $-10 - 3(-4) = -22$. Correct the result.

2. A balance ends at 7 dollars after a 19-dollar deposit. Find the starting balance.

3. A -30-point change over 5 turns is reported as $+6$ per turn. Correct it.

4. Temperature ends at $-8°$C after falling 3 degrees/hour for 4 hours. Find its start.

5. A diver at -18 m rises 7 m. A student reports -25 m. Correct it.

6. A robot starts at -2 and ends at 10 after 4 equal moves. Model its change as $4s$ and find signed size per move.

Answer Key

1. 2.
2. -12 dollars.
3. -6 points/turn.
4. 4°C.
5. -11 m.
6. $4s = 12$; $s = +3$ units/move.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $3(-4) = -12$.
2. $-10 - (-12) = -10 + 12 = 2$.

Problem 2

1. Start $= 7 - 19 = -12$ dollars.
2. Check $-12 + 19 = 7$ dollars.

Problem 3

1. $-30/5 = -6$ points per turn.
2. Check $5(-6) = -30$ points.

Problem 4

1. Total change $= 4(-3) = -12$ degrees.
2. Start $= -8 - (-12) = 4^\circ$C.

Problem 5

1. Rising is $+7$ m, not -7 m.
2. $-18 + 7 = -11$ m; $-11 - (-18) = 7$ m rise.

Problem 6

1. Displacement $= 10 - (-2) = 12$ units, so $4s = 12$.
2. Each move $s = 12/4 = 3$ units.

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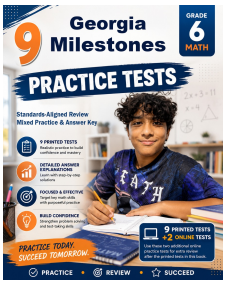

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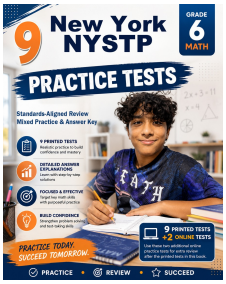

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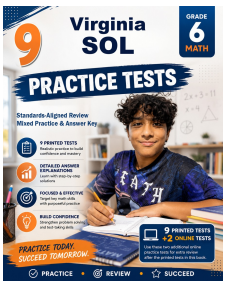

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