Compute with Integers in Context

Computing with integers in context: Models and calculations

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 balance starts at -12 dollars. Three deposits of 7 dollars are made. Find final balance.

2. Temperature starts at $6°$C and falls 4 degrees/hour for 3 hours. Find final temperature.

3. A game starts at -8 points, gains 15, then loses 6. Find final score.

4. A diver moves from -3 to -27 m in 6 min. Find signed rate.

5. A lift goes from floor -4 to 5, then down 3 floors. Find final floor.

6. Four equal penalties change a score by -36. Find points per penalty.

Answer Key

1. 9 dollars.
2. -6°C.
3. 1 point.
4. -4 m/min.
5. Floor 2.
6. -9 points.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Deposits total $3 \times 7 = 21$ dollars.
2. Final $= -12 + 21 = 9$ dollars.

Problem 2

1. Change $= 3 \times (-4) = -12$ degrees.
2. Final $= 6 - 12 = -6$°C.

Problem 3

1. After the gain: $-8 + 15 = 7$.
2. After the loss: $7 - 6 = 1$.

Problem 4

1. Change $= -27 - (-3) = -24$ m.
2. Rate $= -24/6 = -4$ m/min.

Problem 5

1. Upward travel is $5 - (-4) = 9$ floors to floor 5.
2. Then $5 - 3 = 2$.

Problem 6

1. $-36/4 = -9$ points per penalty.
2. Check $4(-9) = -36$ points.

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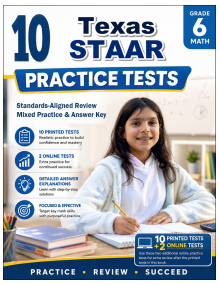

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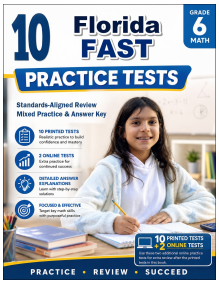

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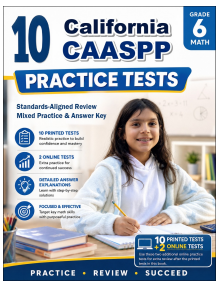

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