

Solving One-Step Equations with Inverse Operations

Grade 6 math · Test Answer Key · Standards: 6.EE.B.5, 6.EE.B.6, 6.EE.B.7

Use this answer key to score the test. Each solution names the operation applied to both sides, and the scoring notes explain how points are given. Award partial credit for correct reasoning with a small arithmetic slip.

Standards: 6.EE.B.5, 6.EE.B.6, 6.EE.B.7 · **Level:** Grade 6

Question 1 Testing solutions (2 points)

(a) $9 + 6 = 15$, so **yes**.

(b) $3 \times 9 = 27$, not 18, so **no**.

Scoring: 1 point per part (substitution shown).

Question 2 Whole-number equations (2 points)

(a) Add 8: **$x = 22$** .

(b) Divide by 7: **$p = 9$** .

Scoring: 1 point per part.

Question 3 Division and decimals (2 points)

(a) Multiply by 6: **$y = 30$** .

(b) Subtract 4.2: **$z = 4.8$** .

Scoring: 1 point per part.

Question 4 Fractions and decimals (2 points)

(a) $x = 1 - \frac{2}{5} = \frac{5}{5} - \frac{2}{5} = \frac{3}{5}$.

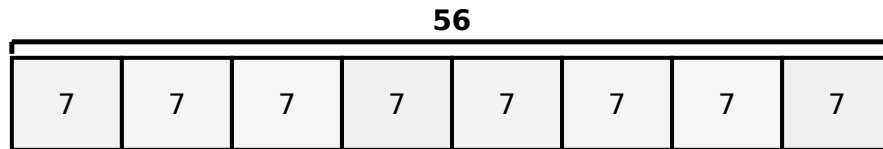
(b) $m = 6 \div 0.4 = \mathbf{15}$.

Scoring: 1 point per part.

Question 5 Tape diagram (3 points)

(a) $8x = 56$.

(b) Divide by 8: $x = 7$.



$8x = 56$, so $x = 7$.

(c) $8 \times 7 = 56$, which matches.

Scoring: 1 point per part.

Question 6 Backpack purchase (3 points)

(a) $m - 19 = 23$.

(b) Add 19: $m = 42$.

(c) $\$42 - \$19 = \$23$, which matches the story.

Scoring: 1 point per part.

Question 7 Find the error (2 points)

(a) The variable is divided by 5, so the inverse is multiplying by 5. Elena divided instead.

(b) $n = 8 \times 5 = 40$; check $40 \div 5 = 8$.

Scoring: 1 point per part.

Question 8 Pretzel stand (2 points)

(a) $5p = 12.50$.

(b) $p = 12.50 \div 5 = \$2.50$.

Scoring: 1 point per part.

Question 9 Writing and solving (2 points)

$n + 12.5 = 30$, so $n = 30 - 12.5 = \mathbf{17.5}$.

Scoring: 1 point for the equation, 1 point for 17.5.