

Grade 8 - Solving Linear Equations in One Variable - Test Answer Key

Common Core 8.EE.C.7a, 8.EE.C.7b · maths-pdf.fr/en/

Use this answer key to score the linear equations test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

Grade 8 · Common Core State Standards: **8.EE.C.7a, 8.EE.C.7b**

Question 1 - Solve [3 pts]

- a. $4x = 24$, so $x = 6$.
- b. $4x = 16$, so $x = 4$.

Scoring: Part a: 1 point. Part b: 1 point for collecting terms, 1 point for the answer.

Question 2 - Distribute [3 pts]

$5x - 10 = 3x + 8$. Then $2x = 18$, so $x = 9$.

Scoring: 1 point for distributing. 1 point for collecting terms. 1 point for $x = 9$.

Question 3 - Fractions [2 pts]

Multiply by 6: $2x + 12 = x + 30$, so $x = 18$.

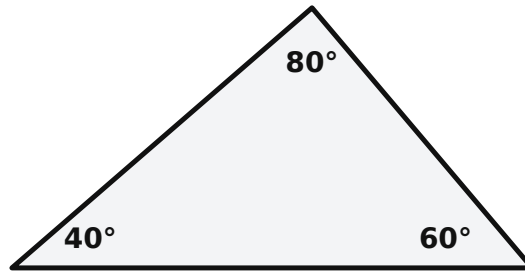
Scoring: 1 point for clearing fractions. 1 point for $x = 18$.

Question 4 - Number of solutions [3 pts]

- a. Infinitely many: $3x + 6 = 3x + 6$.
- b. No solution.
- c. Subtracting $2x$ gives $7 = -1$, a false statement.

Scoring: 1 point per part.

Question 5 - Triangle [3 pts]



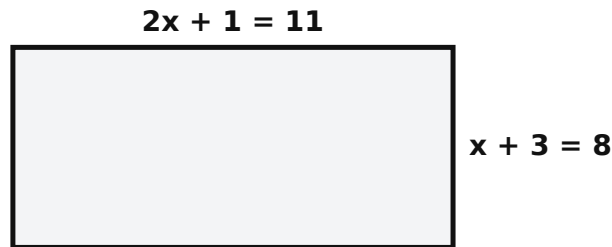
Angles of a triangle add to 180 degrees.

$$x + (x + 20) + 2x = 180, \text{ so } 4x = 160 \text{ and } x = 40.$$

Angles: 40°, 60°, 80°.

Scoring: 1 point for the equation, 1 point for $x = 40$, 1 point for the three angles.

Question 6 - Rectangle [2 pts]



$$x = 5.$$

$$2(2x + 1) + 2(x + 3) = 38, \text{ so } 6x + 8 = 38 \text{ and } x = 5.$$

Scoring: 1 point for the equation. 1 point for $x = 5$.

Question 7 - Compare plans [3 pts]

$$10x + 15 = 15x, \text{ so } 15 = 5x \text{ and } x = 3.$$

Scoring: 1 point for the equation. 1 point for solving. 1 point for 3 weeks.

Question 8 - Explain [1 pt]

It is true for every value of x , since the variable disappeared.

Scoring: 1 point for a correct explanation.

Total
20 points