# **Math 8 B Unit Test Guide**

## Solving Linear Equations Unit Test

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| **Item** | **Lesson Coverage** | **Objective** | **Lesson Page** | **Assessment Item** |
| 1 | Lesson 2: Solve One-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve one-step linear equations in one variable. | All | Solve for *x*. $-5x=-30$*x* = \_\_\_\_\_Answer: 6 |
| 2 | Lesson 3: Solve Two-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve two-step linear equations in one variable. | p. 1-5 | Solve for *x*. $12-\frac{x}{9}=11$*x* = \_\_\_\_\_Answer: 9 |
| 3 | Lesson 3: Solve Two-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve two-step linear equations in one variable. | p. 1-5 | Solve for *x*. $-20=-5+3x$*x* = \_\_\_\_\_Answer: $-5$ |
| 4 | Lesson 3: Solve Two-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve two-step linear equations with rational coefficients in one variable. | p. 6-10 | Solve for *x*. $20=5-\frac{3}{8}x$*x* = \_\_\_\_\_Answer: $-40$ |
| 5 | Lesson 4: Solve Multi-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve linear equations that require simplifying using the distributive property. | p. 1-5 | Solve for *x*. $7\left(4x-15\right)=63$*x* = \_\_\_\_\_Answer: $6$ |
| 6 | Lesson 4: Solve Multi-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve multi-step linear equations in one variable. | p. 6-10 | Solve for *x*. $-2\left(3x-15\right)-25=35$*x* = \_\_\_\_\_Answer: $-5$ |
| 7 | Lesson 5: Solve Equations with Variables on Both Sides | Fluently (efficiently, accurately, and flexibly) solve multi-step linear equations in one variable, when the same variable appears on both sides of the equal sign. | All | Solve for *x*. $12x+5=10x-11$*x* = \_\_\_\_\_Answer: $-8$ |
| 8 | Lesson 6: Linear Equations in Real-World Scenarios | Write linear equations in one variable with the same variable on both sides representing a real-world problem. | p. 1-6 | At the beginning of the month, a song on a streaming service already had 1,000 listens and was getting 38 new listens each day. Meanwhile, a different song already had 900 listens, and was getting 40 new listens each day. Write an equation to show the number of days it would take for the two songs to have the same number of listens. Use *x* as your variable.Answer: $1,000+38x=900+40x$ |
| 9 | Lesson 6: Linear Equations in Real-World Scenarios | Solve linear equations in one variable with the same variable on both sides representing a real-world problem. | p. 7-13 | An ice-skating rink has two ways you can use the facility. The first option is to pay $10 per visit. The second option is to pay $32 per month, and $6 per visit. Write and solve an equation to show the number of visits it would take for the cost of the two plans to be equal.Answer: $10x+32+6x$; $x=8$ |
| 10 | Lesson 6: Linear Equations in Real-World Scenarios | Solve linear equations in one variable with the same variable on both sides representing a real-world problem. | p. 7-13 | At the beginning of the month, a song on a streaming service had 700 listens, and it was getting 52 new listens each day. Meanwhile, a different song had 600 listens, and it was getting 56 new listens each day. When will the two songs have the same number of listens?The songs will have the same number of listens after \_\_\_\_\_days.Answer: 25 |
| 11 | Lesson 7: How Many Solutions? | Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solution. | p. 1-6 | Which of the following equations has no solutions?Answer: $-6x+4=-6x+3$ |
| 12 | Lesson 7: How Many Solutions? | Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solution. | p. 1-6 | Which of the following equations has exactly one solution?Answer: $-3x-8=3x-8$ |
| 13 | Lesson 7: How Many Solutions? | Solve multi-step linear equations by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). | p. 7-11 | Solve for *x* to determine if the equation has one, none, or infinite solutions.$$11x=3(7x-1)-10x$$Answer: The equation has no solution. |
| 14 | Lesson 7: How Many Solutions? | Solve multi-step linear equations by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). | p. 7-11 | Solve for *x* to determine if the equation has one, none, or infinite solutions.$$5\left(2x+2\right)-4=2x+6$$Answer: The equation has one solution: $x=0$. |
| 15 | Lesson 4: Solve Multi-Step Linear Equations | Fluently (efficiently, accurately, and flexibly) solve multi-step linear equations in one variable. | p. 6-10 | Solve the following linear equation for *x*. Then check your answer. Show all your steps for solving and checking. $$5x+8+x=32$$Answer: The student should show all steps for solving and checking. |