LESSON MAKER PRO

Balance and Bound

Solve linear equations and inequalities in one variable.

HIGH SCHOOL · HSA-REI.B

CCSS.Math.Content.HSA-REI.B "Solve equations and inequalities in one variable"

NAME _____ DATE _____

ISOLATE X

Use inverse operations to get x alone. Keep an equation balanced by doing the same operation to both sides. For an inequality, reverse the inequality sign only when you multiply or divide both sides by a negative number.

WORKED EXAMPLE

Solve: 19x + 15 = 91

1. 19x + 15 = 91
2. 19x = 76
3. x = 76/19
4. x = 4

Answer: x = 4

PRACTICE 6 problems

1 Solve: 6x - 9 = 27

ANSWER _____

2 Solve: -2x + 11 = -1

ANSWER _____

3 Solve: 5(x - 2) = 40

ANSWER _____

4 Solve: 3x + 7 <= 25

ANSWER _____

5 Solve: -7x - 5 > 16

ANSWER _____

6 Solve: (2/3)x + 1 = 9

ANSWER _____

APPLY IT Show your work

1 Your school esports club charges $12 for a monthly pass and $6 for each extra tournament entry. You can spend no more than $48 this month. How many extra entries, x, can you buy?

WORK SPACE

ANSWER _____

2 You earn $11 per hour helping at an after-school coding camp. After receiving a $20 bonus, your total pay is $75. How many hours, x, did you work?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Solve: 5(3x - 2) + 6 = 2(x + 9)

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ANSWER KEY

Balance and Bound

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Solve: 6x - 9 = 27	**x = 6**
2	Solve: -2x + 11 = -1	**x = 6**
3	Solve: 5(x - 2) = 40	**x = 10**
4	Solve: 3x + 7 <= 25	**x <= 6**
5	Solve: -7x - 5 > 16	**x < -3**
6	Solve: (2/3)x + 1 = 9	**x = 12**

PART 2 · APPLY IT

1. **x <= 6, so you can buy at most 6 extra entries.** Write 12 + 6x <= 48. Subtract 12, then divide by 6 to get x <= 6.
2. **x = 5 hours** Write 11x + 20 = 75. Subtract 20, then divide by 11 to get x = 5.

CHALLENGE

x = 22/13

Accept equivalent forms of the inequality answers. For the esports problem, accept x <= 6 or a statement that the possible whole-number entries are 0 through 6.