

1.4: Write Equations and Inequalities

Goals: *Translate verbal sentences into equations or inequalities

*Decide if a given value is a solution to an equation or inequality

Open sentence:

Equation:

Inequality:

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Translate the following phrases into equations or inequalities:

Ex: The difference of twice a number k and 8 is 12

Ex: The product of 6 and a number is at least 24

Ex: The quotient of a number p and 12 is at least 30

Ex: The sum of twice a number r and 3 is 11

Ex: The quotient of a number and 2 is at most 16

Ex: Your math grade, g , needs to be at least a 75

Combining inequalities:

Ex: x is greater than 3 and less than 9

Ex: A number y is no less than 5 and no more than 13

Ex: A number q is at least 5 and less than 17

Solution (of an equation or inequality):

Check whether 3 is a solution to the equation or inequality. Yes or No.

Ex: $8 - 2x = 2$

Ex: $4x - 5 = 6$

Ex: $2z + 5 > 12$

Ex: $5 + 3n \leq 20$

Check whether 5 is a solution to the equation or inequality. Yes or No.

Ex: $24 - 3d = 9$

Ex: $3x + 4 = 18$

Ex: $2w - 7 \leq 3$

Ex: $4 + 3p > 19$

Check whether the given number is a solution: (the number given comes after the semi-colon)

Ex: $9 - x = 4$; 5

Ex: $b + 5 < 15$; 7

Ex: $2n + 3 \geq 21$; 9

Ex: The last time you and 3 friends went to a mountain bike park, you had a coupon for \$10 off the total purchase and paid \$17 for 4 tickets. What is the regular price for the 4 tickets? What is the regular price of 1 ticket?

Ex: A basketball player scored 351 points last year. If the player plays 18 games this year, will an average of 20 points per game be enough to beat last year's total?

Ex: Tyler would like to make no less than \$610 selling coffee mugs online. If he sells 28 mugs for \$22, will he achieve his goal?