Name _____ Date _____ Period _____

Solving Equations to find the Value of a Variable

Real-life situations can often be described using tape diagrams, hanger diagrams, and/or equations. For each situation:

- Draw a tape diagram OR a hanger diagram
- Write an equation with a variable for the amount you don't know
- Describe what your variable represents for each situation
- Solve each equation. Write each mathematical step that you do to both sides.
- Circle your final answer

Noah and his sister are making prize bags for a game at the fair. Noah is putting 7 erasers in each bag. His sister is putting in some number of stickers. After filling 3 of the bags, they have used a total of 57 items.

There were 5 boxes that of pencils on the teacher's desk at the beginning of the day. Students took 4 pencils out of each box. There were 40 pencils left at the end of the day.

What do you notice about the two equations? What is different about how you work to solve each one? Do the same strategies work for both situations?

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Solve each equation for the variable. Show your steps. Circle your final answer.

1) $3d - 13 = 11$	2) $2.4z + 1.2 = 18$	3) $6y - 2 = 10$
4) $7v + 4 = 25$	5) $2c - 8 = 18$	6) $4f + 11 = 29$
7) $4.1a - 10.9 = 26$	8) $12x + 2 = 146$	9) $9(y + 3) = 27$
10) $6(x + 3) = 51$	11) $9(x + 6) = 90$	12) $8(x - 5.1) = 31.2$
13) $4(x - 5) = 12$	14) $3(2n + 4) = 24$	15) $2(x + 5) = 12$