Name: _____ Date: _____

Chapter 10 Gifted and Enrichment

1. Here are four ways to solve the one-step equation $x + 2 = 5$.

Balance

$x + 2 = 5$

$x + 2 - 2 = 5 - 2$

$x = 3$

Substitution

$x + 2 = 5$

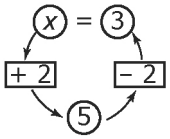
What plus 2 is 5?

$3 + 2 = 5$

So, $x = 3$

Flow Chart

$x + 2 = 5$



$x = 3$

Related Number Sentence

$x + 2 = 5$

$x = 5 - 2$

$x = 3$

Model four ways to solve the two-step equation $7x - 3 = 11$.

2. For the two-step equation $2x + 1 = 9$, usually the first step is to subtract 1 from both sides. However, a key notion of algebra is that as long as you use procedures correctly, you should get the answer. Solve $2x + 1 = 9$ by dividing first. Show your work. Which way do you prefer? Why?

3. The sum of the heights of three children is 291 cm. Miriam is 20 cm taller than Fabian and 5 cm shorter than Kelsey. Find each child's height.

4. The following is a trick to determine a person's birthday. Try it.

Step 1: Consider your birth month as a number (January is 1, … , July is 7, … , December is 12).
Step 2: Multiply your birth month by 5.
Step 3: Add 6 to the product from Step 2.
Step 4: Multiply the sum from Step 3 by 4.
Step 5: Add 9 to the product from Step 4.
Step 6: Multiply the sum from Step 5 by 5.
Step 7: Add the day you were born to the product from Step 6.
Step 8: Subtract 165 from the sum from Step 7.

The result is the month followed by the day.
Create an algebraic expression to show why the trick works.
Let m be the x month and d be the day.

5. A tradesperson leaves Salmon Arm for Banff with an amount of money. While in Banff, he doubles his money but spends $160. From Banff, he travels to Moosejaw and again doubles the money he had upon arrival and spends $160. From Moosejaw, he travels to Portage La Prairie and again doubles the money he had upon arrival and spends $160. When the tradesperson looks into his wallet, he has no money left. How much money did he have when he left Salmon Arm?