Chapter 10 Gifted and Enrichment Answers

1. Balance $7x - 3 = 11$

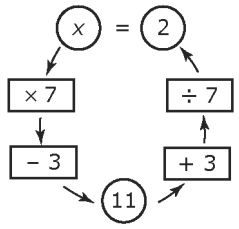
$7x - 3 + 3 = 11 + 3$

$7x = 14$

$\frac{7x}{7} = \frac{14}{7}$

$x = 2$

Flow Chart $7x - 3 = 11$



$x = 2$

Substitution $7x - 3 = 11$

What minus 3 is 11?

$14 - 3 = 11$

So, $7x = 14$

What times 7 is 14?

$2 \times 7 = 14$

So, $x = 2$

Related Number Sentence

$7x - 3 = 11$

$7x = 11 + 3$

$7x = 14$

$x = 14 \div 7$

$x = 2$

2. $2x + 1 = 9$

$\frac{2x}{2} + \frac{1}{2} = \frac{9}{2}$

$x + \frac{1}{2} - \frac{1}{2} = \frac{9}{2} - \frac{1}{2}$

$x = \frac{8}{2}$

$x = 4$

Example: I prefer to subtract first because dividing first has a lot of work with fractions.

3. Let m be Miriam's height in centimetres. Then, Fabian's height in centimetres will be $m - 20$ and Kelsey's height in centimetres will be $m + 5$.

The sum of the heights is 291 cm. So,

$m + (m - 20) + (m + 5) = 291$

$3m - 15 = 291$

$3m - 15 + 15 = 291 + 15$

$3m = 306$

$m = 102$

So, $m - 20 = 102 - 20$

$= 82$

And, $m + 5 = 102 + 5$

$= 107$

Miriam is 102 cm tall, Fabian is 82 cm tall, and Kelsey is 107 cm tall.

4. Step 1: m

Step 2: $5m$

Step 3: $5m + 6$

Step 4: $4(5m + 6) = 20m + 24$

Step 5: $20m + 24 + 9 = 20m + 33$

Step 6: $5(20m + 33) = 100m + 165$

Step 7: $100m + 165 + d$

Step 8: $100m + 165 + d - 165 = 100m + d$

5. Work backward and let x be the amount he has upon arrival in Portage La Prairie, which is the amount he had when he left Moosejaw.

$2x - 160 = 0$

$2x = 160$

$x = 80$

He had \$80 when he arrived in Portage La Prairie and when he left Moosejaw.

Let y be the amount he has upon arrival in Moosejaw, which is the amount he had when he left Banff.

$2y - 160 = 80$

$2y = 240$

$y = 120$

He had \$120 when he arrived in Moosejaw and when he left Banff.

Let z be the amount he has upon arrival in Banff, which is the amount he had when he left Salmon Arm.

$2z - 160 = 120$

$2z = 280$

$z = 140$

The tradesperson had \$140 when he left Salmon Arm.