In the Savage family, there are four children: Blane, Shane, Dane, and Layne.   Blane is 2 years older than Shane. Shane is one year younger than Dane. Dane is half the age of Layne. Layne is 14. How old is Blane?

$$ax^2 + bx + c = 0$$

Example:

$$5x^2 + 7x - 9 = 4x^2 + x - 18$$
$$5x^2 + 7x - 9 - 4x^2 - x + 18 = 0$$
$$x^2 + 6x + 9 = 0$$

Barbara loves to read. She reads every book she can find. In October, she read 5 books! The first book she read had 100 less pages than the second book she read. The second book had one half the number of pages that the third book had. The third book had one half the number of pages that the fourth book had. The fourth book had 200 less pages than the fifth book. The fifth book had 1000 pages. How many pages did the first book have?

$$ax^2 + bx + c = 0$$

Example:

$$5x^2 + 7x - 9 = 4x^2 + x - 18$$
$$5x^2 + 7x - 9 - 4x^2 - x + 18 = 0$$
$$x^2 + 6x + 9 = 0$$

Think:

B = 2 + S

S = D – 1

D = ½ × L

L = 14, so (plug in what you know working backwards)

D = ½ × L; D = ½ × 14; D = 7

S = D – 1; S = 7 – 1; S = 6

B = 2 + S; B = 2 + 6; B = 8

Answer: Blane is 8 years old

Think:

Book 1 = Book 2 – 100

Book 2 = ½ x Book 3

Book 3 = ½ x Book 4

Book 4 = Book 5 - 200

Book 5 = 1000 pages, so (plug in what you know working backwards)

Book 4 = Book 5 - 200; Book 4 = 1000 – 200; Book 4 = 800

Book 3 = ½ x Book 4; Book 3 = ½ x 800; Book 3 = 400

Book 2 = ½ x Book 3; Book 2 = ½ x 400; Book 2 = 200

Book 1 = Book 2 – 100; Book 1 = 200 – 100; Book 1 = 100

Answer: Book 1 has 100 pages