



Algebra & Operations 5th/6th

1	2 BLARBs, 1 BLALB, and 2 BLABs cost \$4.75. 2 BLARBs, 2 BLABs, and 5 BLALBs cost \$8.55. How much does 1 BLALB cost?
2	Define the operation $a\#b$ as $ab - a - b + 1$ for real numbers a and b . Find the value of $(2\#0)\#(1\#4)$.
3	Find the 15th term of the following sequence: 1, 3, 6, 10, 15, 21, 28, ... where the first term is 1.
4	The sum of Jill's current age and Jane's current age is 40. In 10 years, Jill will be four times as old as Jane. What is Jill's current age?
5	If a and b are real numbers and $a^2 + b^2 = 0$, find the value of $a + b$.
6	Bacteria in colony A produce two offspring in 1 minute while bacteria in colony B produce four offspring in 1 minute. Steven checks after every minute and compares the number of bacteria in the two colonies. If there were initially 20 bacteria in colony A and 1 in colony B, after how many minutes will Steven have found that the total number of bacteria in colony B has exceeded that of colony A?
7	Brian wanted to add $\frac{1}{3}x + 5$ to A but he mistakenly subtracted $\frac{1}{3}x + 5$ from A and obtained the result $1.5x - 6$. In terms of x , express the result that he intended.
8	The line $x - 2y = -10$ intersects $y = x - 3 $ at two points. Find the sum of the two x -coordinates of those points.
9	If $a + b = 10$ and $a - b = 6$ find the value of $a^2 + b^2$.
10	If $x = 3$, $y = -2$, and $z = -5$, find the value of $\frac{x(y+z)^2 - xyz}{3}$.