

Elementary Algebra Skill

Setting Up and Solving Number Problems Leading to Polynomial Equations

Set up and solve.

1. A number added to its cube is the same as twice the square of the number. Find the number(s).
2. The difference of the cube of a number and the square of the number gives six times the number. Find the number(s).
3. Twelve times a number plus the square of the number gives the number cubed. Find the number(s).
4. A number cubed is equal to twenty times the number less the square of the number. Find the number(s).
5. A number cubed less five times the number squared is the same as twice the number squared less ten times the number. Find the number(s).
6. The product of a number and 9 more than the square of the number is equal to six times the square of the number(s).
7. A number squared multiplied by the difference of the number and 2 is the same as twice the number multiplied by the sum of the number and 16. Find the numbers(s).
8. The difference of the cube of a number and the square of the number is the same as the sum of the square of a number and eight times the number. Find the number(s).
9. Twice the difference of a number cubed and two times the number squared is equal to three times the difference of the number squared and the number. Find the number(s).
10. Three times the sum of a number cubed and three times the number squared yields negative four times the sum of the number and its square. Find the number(s).
11. Six times the cube of a number minus 12 times the square of the number is the same as twice the number subtracted from the square of the number. Find the number(s).
12. A number cubed minus the number squared gives $\frac{5}{4}$ of the number squared. Find the number(s).
13. The difference of a number and 5 multiplied to four times the square of the number is the same as the difference of the number and 5 multiplied to the number. Find the number(s).
14. Twice the sum of a number cubed and a number squared is equal to twelve times the difference of a number squared and the number. Find the number(s).
15. A number added to its cube is equal to the cube of the number subtracted from three times its square. Find the number(s).

Answers to Setting Up and Solving Number Problems Leading to Polynomial Equations

- 1) 0 or 1
- 2) 0, 3, or -2
- 3) 0, -3, or 4
- 4) 0, -5, or 4
- 5) 0, 2, or 5
- 6) 0 or 3
- 7) 0, -4, or 8
- 8) 0, 4, or -2
- 9) 0, $\frac{1}{2}$, or 3
- 10) 0, $-\frac{1}{3}$, or -4
- 11) 0, $\frac{1}{6}$, or 2
- 12) 0, $\frac{3}{2}$, or $-\frac{3}{2}$
- 13) 0, $\frac{1}{4}$, or 5
- 14) 0, 2, or 3
- 15) 0, $\frac{1}{2}$, or 1