

Please select the correct answer number for each question. There are more answers than questions. Answers may be repeated.

1)  $1, \frac{-1 \pm i\sqrt{5}}{2}$

2)  $8$

3)  $-1, -\frac{1}{5}, 0$

4)  $5, -1, -1, i, -i$

5)  $-2, \frac{1 + i\sqrt{3}}{2}, \frac{1 - i\sqrt{3}}{2}$

6)

You are correct. Your friend may have counted the number of terms in the equation instead of using the Fundamental Theorem of Algebra.

7)  $2; 2 \text{ or } 0; \pm 1, \pm 3, \pm \frac{1}{2}, \pm \frac{3}{2}$

8)

The Fundamental Theorem of Algebra says that the degree of the function is equal to the number of zeros. The degree of  $x^3 = 0$  is 3.  $x^3$  can be written as  $x \cdot x \cdot x = 0$  or  $(x - 0)(x - 0)(x - 0) = 0$ . This shows that there are 3 linear factors and 3 zeros, all equal to 0.

9)  $4, -4, \frac{-3 + \sqrt{29}}{2}, \frac{-3 - \sqrt{29}}{2}$

$5; 5, 3, \text{ or } 1; \pm 1, \pm 3,$

10)  $\pm 5, \pm 15, \pm \frac{1}{2}, \pm \frac{3}{2}, \pm \frac{5}{2}, \pm \frac{15}{2}, \pm \frac{1}{3}, \pm \frac{5}{3}, \pm \frac{1}{6}, \pm \frac{5}{6}$

11)  $-1, 0, 1$