Pre-Calculus AB   Name_____
Worksheet 15 - Lesson 46
Date_____ Period_____

Factor each using difference of squares and/or sum and difference of cubes.

1) $x^8 - x^2 = 0$

2) $x^8 - 17x^4 + 16 = 0$

3) $x^6 + 6x^4 + 8x^2 = 0$

4) $x^7 - x = 0$

Find all zeros by using the quadratic formula.

5) $f(x) = 3x^2 - 5x + 8$

6) $f(x) = 3x^2 - x + 2$

7) $f(x) = 2x^2 - 4x + 3$

8) $f(x) = x^2 + 4x + 9$

Find the number of unique permutations of the letters in each word.

9) RARE

10) HYPHEN

11) DEEPEN

12) RUDDY

Find the number of possibilities in each scenario.

13) A team of 15 soccer players needs to choose a captain and co-captain.

14) A group of 45 people are going to run a race. The top three runners earn gold, silver, and bronze medals.