More practices on radicals
Precalculus RH

10.
(47%)   If $a < b$, find the ordered pair of positive integers (a,b) that satisfies
$$\sqrt{10 + \sqrt{84}} = \sqrt{a} + \sqrt{b} .$$

16.
(39%)   If $a > 0$, $b > 0$, $a \neq b$, and $\dfrac{a\sqrt{b} + b\sqrt{a}}{a\sqrt{b} - b\sqrt{a}} - \dfrac{a\sqrt{b} - b\sqrt{a}}{a\sqrt{b} + b\sqrt{a}} = \sqrt{ab}$, write an

equation expressing a explicitly in terms of b.

22.
(32%)   Find all ordered triples of real numbers (x,y,z) that satisfy
$$\sqrt{x - y + z} = \sqrt{x} - \sqrt{y} + \sqrt{z},$$
$$x + y + z = 8, \text{ and}$$
$$x - y + z = 4.$$

25.   The expression $\sqrt{10 + \sqrt{10 + \sqrt{10 + \ldots}}}$, where the dots indicate an infinite repetition of the indicated pattern of operations,

can be expressed in the form $\dfrac{a + \sqrt{b}}{c}$, where a, b, and c are integers,

no two of which have a common prime factor. Find the ordered triple (a,b,c).

26.
(25%)   If $a = \sqrt{.16}$, $b = \sqrt[3]{.0639}$, $c = \sqrt[6]{.0041}$, and $d = (.2)^2$, arrange a, b, c, and d in increasing order.