2. Solve: 10x4 - 9x2 + 2 = 0

$$\frac{\sqrt{10}}{5}, -\frac{\sqrt{10}}{5}, \frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}$$

5. Solve: x2 + 14x – 4 = 0

$$-7+\sqrt{53},\ -7-\sqrt{53}$$

21. Multiply: (5√2 – 15 √7)(3√2 + 9√7)

-915

24. Multiply and simplify: 81d2 * 3d-9
3d2-18d+27 9d

$$\frac{81d^2}{3d^2-18d+27} * \frac{3d-9}{9d} = \frac{9d}{d-3}$$

26. Simplify 5√-1/1024

$$\sqrt[5]{-\frac{1}{1024}} = -\frac{1}{4}$$

33. Solve for x: 4x(x-7) – 5x(x-6) = -3

-1, 3

34. Find the following 12√(-6)12

$$\sqrt[12]{(-6)^{12}} = 6$$

35. Identify the degree of each term of the polynomial and the degree of the polynomial: -4x3 + 6x2 + 4x + 2

Degree of the 1st term: 3
Degree of the 2nd term: 2
Degree of the 3rd term: 1
Degree of the 4th term: 0
Degree of the polynomial: 3

36. Subtract. Simplify by collecting like radical terms if possible:
5√75 - 4√3

$21\sqrt{3}$

37. Solve: (x+2)(x-10)(x+1)>0
a)solution set is (,)
b) solution is all real numbers or
c) ther is no solution

a) solution set is {x | -2 < x < -1, x > 10 }

38. Add. Simplify if possible 2y + y
y2-16 y-4

$$\frac{2y}{y^2-16}+\frac{y}{y-4}=\frac{y(y+6)}{y^2-16}$$

39. For the following equation, state the value of the discriminant and then describe the nature of the solution: 15x2 + 5x – 14 = 0
The value of discriminant is: .
a> The equation has one real solution
b> The equation has two imaginary solutions
c> The equation has two real solutions

Discriminant = 865
c. The equation has two real solutions.

50. Find the variation constant and an equation of variation where y varies directly as x and y=42 when x=7
The variation constant is k= .
The variation constant is y= .

k = 6
y = 6x

51. Simplify by factoring. Assume that all expressions under radicals represent non negative numbers: √50a2b

$$\sqrt{50a^2b} = 5a\sqrt{2b}$$

52. Rationalize the denominator. Assume all expressions under radicals represent positive numbers: √u - √v .
√u + √v

$$\frac{\sqrt{u}-\sqrt{v}}{\sqrt{u}+\sqrt{v}} = \frac{u-2\sqrt{uv}+v}{u-v}$$

56. Solve: √9x+55 = x+5

$$\sqrt{9x+55} = x+5$$

$$x = 5$$

60. Divide and simplify: g3 / g15

$$\frac{g^3}{g^{15}} = \frac{1}{g^{12}}$$