Check-Up...

Rationalize and simplify...

$$\frac{3\sqrt{20} - 5\sqrt{98}}{-\sqrt{45} + 2\sqrt{50}}$$

$$\frac{3(2/5) - 5(7/5)}{-3\sqrt{5} + 3(5/5)}$$

$$\frac{(6\sqrt{5} - 35/5)}{(6\sqrt{5} - 35/5)} = \frac{-3\sqrt{5} - 10\sqrt{5}}{-3\sqrt{5} - 10\sqrt{5}}$$

$$\frac{-3\sqrt{5} + 10\sqrt{5}}{6i_{70}n_{70}} = \frac{-18(5) - 60\sqrt{10} + 105\sqrt{10} + 350(2)}{45 - 200}$$

$$= \frac{-90 + 45\sqrt{10} + 700}{45 - 200}$$

$$= \frac{-90 + 45\sqrt{10} + 700}{45 - 200}$$

$$= \frac{-120 + 9\sqrt{10}}{-31}$$

$$= -\frac{120 - 9\sqrt{10}}{31}$$

$$= -\frac{122 - 9\sqrt{10}}{31}$$

$$= -\frac{122 - 9\sqrt{10}}{31}$$

$$= -\frac{122 - 9\sqrt{10}}{31}$$

Quiz Tomorrow....Sections 5.1 and 5.2 from textbook

- Restrictions
- Simplifying radicals
- Adding and subtracting radical expressionsMultiplying radical expressions
- Division of radical expressions (Rationalizing)



Page 304 #1 - 17 If you are looking for more practice....

17.
$$(1+\sqrt{5})$$
 $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(2+\sqrt{3})$ $(4-3)(1)$ $(4-3)$

Radical Equations

Focus on...

- · solving equations involving square roots
- · determining the roots of a radical equation algebraically
- · identifying restrictions on the values for the variable in a radical equation
- · modelling and solving problems with radical equations

VOCABULARY

Radical equation An equation that contains radicals, with the variable in the radicand

Extraneous solution An apparent solution that does not make the original equation true

SOLVING RADICAL EQUATIONS

To solve a radical equation, follow these steps:

- Step 1 (Isolate) the radical on one side of the equation, if necessary.
- Raise each side of the equation to the Step 2 same power to eliminate the radical.
- Solve the resulting <u>equation</u> using techniques Step 3 that you learned in previous chapters.
- Step 4 Check your solution.

Solve a Radical Equation

Example 4 Solve an Equation with Rational Exponents

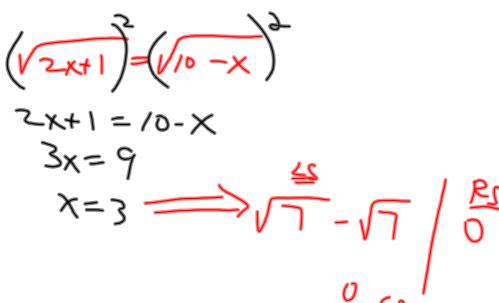
Solve $(3x + 4)^{2/3} = 16$. Check for extraneous solutions.

$$3x+4 = 64$$

$$\frac{3x = 60}{3}$$

Example 2 Solve an Equation with Two Radicals

Solve $\sqrt{2x + 1} - \sqrt{10 - x} = 0$.



Example 3 Solve an Equation with an Extraneous Solution

Solve $x - 2 = \sqrt{x + 10}$. Check for extraneous solutions.

$$(x-a) = (x+10)$$

$$x^{2}-4x+4 = x+10^{-10}$$

$$x^{2}-5x-6 = 0$$

$$x^{2}-6=0 \text{ M. } x+6=0$$

$$x+6=0 \text{ M. } x+6=0$$