LESSON PLAN

Course: Grade 12 U Advanced Functions **Lesson: 6 - 4**

Unit/Chapter: Other Function Types **Topic: Solving Radical Equations**

- ***homework check:*** **HRW exercise 2.4 p. 116 # 1 - 20**

- **Solving Radial Equations**

When solving a radical equation, we systematically square both sides to get rid of the root signs.

example) Solve $5+\sqrt{3x-11}=x$

$$\left(\sqrt{3x-11}\right)^2=(x-5)^2$$
$$3x-11=x^2-10x+25$$
$$0=x^2-13x+36$$
$$0=(x-9)(x-4)$$

Therefore, $x=9$ or $x=4$

example)

$$\sqrt{x+1}-3=\sqrt{2x-1}$$
$$\left(\sqrt{x+1}-3\right)^2=\left(\sqrt{2x-1}\right)^2$$
$$x+1-3\sqrt{x+1}-3\sqrt{x+1}+9=2x-1$$
$$-6\sqrt{x+1}+x+10=2x-1$$
$$-6\sqrt{x+1}=x-11$$
$$36(x+1)=x^2-22x+121$$
$$36x+36=x^2-22x+121$$
$$0=x^2-58x+85$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{58 \pm \sqrt{(-58)^2 - 4(1)(85)}}{2(1)}$$

$$x = \frac{58 \pm \sqrt{3024}}{2}$$

$$x = \frac{58 \pm 12\sqrt{21}}{2}$$

$$x = 29 \pm 6\sqrt{21}$$

- ***homework assignment:*** **<u>HRW</u> exercise 2.4 p. 116 # 28 – 41 and exercise 2.7 # 3 – 6**