Friday, September 13, 2017 Bellwork Alg 2B

1. Rationalize the denominator. Simplify your answer.

2. Solve each.

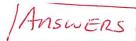
a)
$$\sqrt{x+1} + 5 = x$$

b)
$$5(2x-1)^{\frac{3}{2}} + 9 = 144$$

3. Simplify. Make sure you leave answers with whole number exponents and no decimal coefficients.

$$\left(\frac{9P^{-10}Q^8}{9^{-1}P^{-2}Q^{-7}}\right)^{-\frac{3}{4}}$$

4. Simplify.
$$(6-2\sqrt{3})(5+8\sqrt{3})$$



1. Rationalize the denominator.

Simplify your answer.

$$\frac{12}{7+\sqrt{5}} = \frac{12(7-\sqrt{5})}{7-\sqrt{5}} = \frac{12(7-\sqrt{5})}{49-5} = \frac{12(7-\sqrt{5})}{44} = \frac{3(7-\sqrt{5})}{11} = \frac{21-3\sqrt{5}}{11}$$

2. Solve each.

a)
$$\sqrt{x+1} + 5 = x$$

 $-5 - 5$
 $(\sqrt{x+1})^2 = (x-5)^2$
 $x+1 = x^2 - 10x + 25$
 $-x-1 = x^2 - 11x + 24$
 $0 = x^2 - 11x + 24$

$$0 = x^{2} - 11x + 24$$

$$0 = (x - 8)(x - 3)$$

$$X = 3 \cdot 8$$

$$X = 8$$

b)
$$5(2x-1)^{\frac{3}{2}} + 9 = 144$$

$$-9 - 9$$

$$\frac{5(2x-1)^{\frac{3}{2}}}{5} = \frac{135}{5}$$

$$(2x-1)^{\frac{3}{2}} = 27)^{\frac{2}{3}}$$

$$2x-1 = 9$$

$$+1 + 1 \Rightarrow 2x = 10$$

$$x=5$$

3. Simplify. Make sure you leave answers with whole number exponents and no decimal coefficients.

$$\frac{9P^{-10}Q^{8}}{9^{-1}P^{-2}Q^{-7}} = \frac{9 \cdot 9}{P^{8}} = \frac{9 \cdot 9}{P^{8}} = \frac{9 \cdot 9}{8 \cdot 9/4} = \frac{9}{8 \cdot 9/4$$

4. Simplify.
$$(6-2\sqrt{3})(5+8\sqrt{3})$$