

Pre-AP Algebra II  
Assignment #31  
[Due Friday 2/7/20]

Name: \_\_\_\_\_  
Period: \_\_\_\_\_

**Directions:** Solve the following equations. Check for extraneous solutions.  
[Notes #98, #99]

1.  $3\sqrt{x+3}=15$

2.  $4\sqrt{x}-1=3$

3.  $\sqrt{x+3}=5$

4.  $\sqrt{3x+4}=4$

5.  $\sqrt{2x+3}-7=0$

6.  $\sqrt{6-3x}-2=0$

7.  $\sqrt{11x+3}-2x=0$

8.  $\sqrt{3x}=\sqrt{x+6}$

9.  $\sqrt{x-15}=3-\sqrt{x}$

10.  $\sqrt{3x+13}-5=x$

11.  $\sqrt[3]{2x-7}=-2$

12.  $\sqrt{5x-3}=\sqrt{7x+9}$

13.  $2\sqrt[3]{5x}-4=6$

14.  $\sqrt[4]{4x+1}=2$

15.  $\sqrt[5]{2x-1}=3$

16.  $-\sqrt[3]{3x-1}-1=1$

**Directions:** Solve the following inequalities. Check your solutions.  
[Notes #99]

17.  $2\sqrt{2x-1}+2>6$

18.  $3\sqrt{-2x+3}+2\leq 8$

**Directions:** Simplify.  
[Notes #100]

19.  $x^3 \cdot x^2$

20.  $x^2(x^4)(x^5)$

21.  $\frac{x^4}{x^3}$

22.  $(-6m^2n^2)(3mn)$

23.  $(-3x^2y)^3(y^2)^4$

24.  $(x^5)^7$

25.  $(-2x)^3$

26.  $\left(\frac{3x^2}{2}\right)^4$

27.  $\frac{5x^2y}{10x^5y^7}$

28.  $\left(\frac{748x^7y^{14}z^{25}}{1069x^{23}y^{17}z^7}\right)^0$

**Directions:** Write in exponential form.

[Notes #100]

29.  $\sqrt[4]{x}$

30.  $\sqrt[6]{3x}$

31.  $\sqrt[5]{x^2}$

32.  $\sqrt[5]{8x^{-1}}$

**Directions:** Write in radical form.

[Notes #100]

33.  $x^{\frac{1}{6}}$

34.  $x^{1.5}$

35.  $x^{\frac{3}{5}}$

36.  $x^{1.2}$

**Directions:** Evaluate.

[Notes #100]

37.  $(-8)^{\frac{2}{3}}$

38.  $(125)^{-\frac{1}{3}}$

**Directions:** Simplify.

[Notes #100, #101]

39.  $\sqrt{36ab^4c^5}$

40.  $\sqrt{24a^{16}b^8c}$

41.  $\sqrt{18a^6b^3c^5}$

42.  $\sqrt[3]{-16a^3b^8}$

43.  $5\sqrt{32} + \sqrt{27} + 2\sqrt{75}$

44.  $(4 + 2\sqrt{5})(3\sqrt{3} + 4\sqrt{5})$