4.4 – Solving a Third-Degree Equation

In this unit we will be solving third-degree equations. Third-degree equations contain a variable that has an exponent of three.

Class Notes – State the degree of each equation. Identify the equation as a first-degree equation, second-degree equation, or a third degree equation.

LP#1 $x^3 = 8$	$w + 3 = 15$	$y^2 = 36$	$3z^3 = 375$
LP#2 $x^3 + 1 = 28$	$32 = 4w^3$	$10z = 120$	$4x^2 = 400$
LP#3 $w^3 + w^2 = w + 6$	$y^3 = 216$	$x^2 = 4x^3$	$x^2 - x = 12$

Class Notes – A solution to each equation is given. Check to see if the solution is correct or incorrect.

LP#4	$x^3 = 125$ $x = 5$	$x^3 = 9$ $x = 3$	$x^3 = 64$ $x = 4$
LP#5	$x^3 + 1 = 28$ $x = 3$	$32 = 4w^3$ $w = 4$	$3z^3 = 375$ $z = 5$

Class Notes – Solve each third-degree equation and check. If you do not solve an equation, explain why.

LP#6 $x^3 = 216$	$4x^2 = 400$	$x^3 = 27$
LP#7 $w + 20 = 3w - 15$	$x^3 = 8$	$x^3 = 1$
LP#8 $x^3 = 64$	$x^2 = 49$	$x^3 = 1000$

Review – Solve each third-degree equation and check.

R#1 $x^3 = 125$	$x^3 = 27$
R#2 $x^3 = 729$	$x^3 = 8$
R#3 $x^3 = 512$	$x^3 = 1000$

Homework

Evaluate.

1) $3^3 =$ **2)** $8^3 =$ **3)** $10^3 =$ **4)** $5^3 =$ **5)** $6^3 =$

6) $9^3 =$ **7)** $4^3 =$ **8)** $7^3 =$ **9)** $1^3 =$ **10)** $2^3 =$

Solve each third-degree equation and check.

11) $x^3 = 1000$ **12)** $x^3 = 512$ **13)** $x^3 = 216$

14) $x^3 = 729$ **15)** $x^3 = 125$ **16)** $x^3 = 8$

17) $x^3 = 343$ **18)** $x^3 = 27$ **19)** $x^3 = 64$