

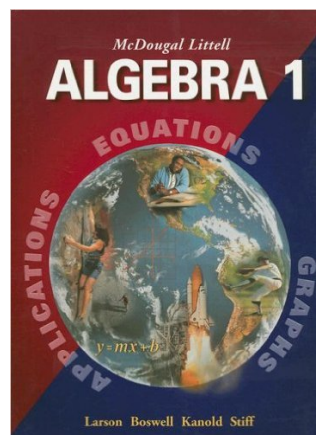
**WELCOME
BACK**

Ms. Engbrecht

Algebra 1.5

*Find Your Seat (chart on table)

*Put your Phone in the Holder



BE HERE
WORK HARD
BE NICE



NO CELLPHONES IN CLASS

#NoTexts #NoPictures
#NotWithoutPermission

CLEAN UP AFTER YOURSELF

#NotYourMom
#TrashGoesInTheGarbage

**TRY YOUR
BEST**

#Goals #WorkHard
#DoNotGiveUp

**COME TO
CLASS
PREPARED**

#NeedPencilPaperTextbook
#BeOnTime #GoodAttitude

WORK HARD

#SaveTheExcuses #DontQuit
#DoYourHomework
#BeResponsible4YourLearning

HAVE A POSITIVE ATTITUDE

#BeNice #BePolite
#GoodAttitudeGoesLongWay

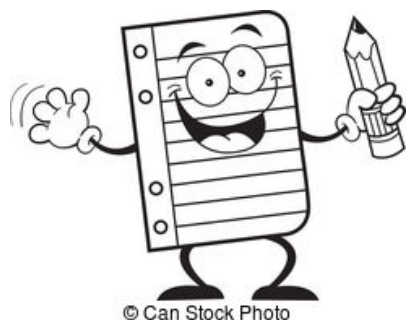
BE RESPECTFUL

- #RespectTeacher
- #RespectClassroomProperty
- #RespectOtherStudents
- #RespectYourself

GET HELP WHEN NEEDED

- #AskQuestions
- #UseNotes
- #ReadTextbook
- #MathLab

Hall Passes



*Before class

*During Work Time

Don't ***Abuse Them***, and you won't ***Lose Them***

Class Rules

- No food, gum, or beverage (except water)
- No electronics except your calculator
(No Phone, iPod, iPad, etc.)
- Be on time (In your seat when bell rings)
- End of the hour... Stay seated until the bell
- Have a good attitude
- Follow the rules set forth by the school

GRADES

50% tests

30% quizzes

20% assignments



Homework

- Expect it daily
- Typically due at the Beginning of next class

Testing Procedure

- Review Day
- Test Day
- Outside of class Retake if you have all assignments done



Sharpen Pencils...

ONE Person up at a time



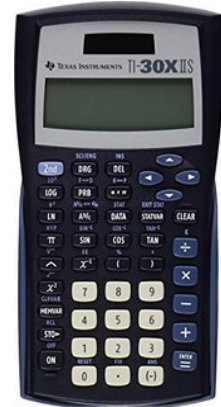
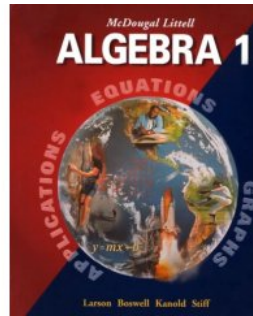
**Before Class Starts*

**During Work Time*

**Bring at least 2 pencils*

Every Day You Will NEED...

- Pencils
- Paper
- Binder (your notes)
- Textbook
- Calculator
- Highlighter



ASK FOR HELP WHEN NEEDED

- *Directed Study (Math Lab)
- *Before School (most days)
- *After School

Let me know when you are coming,
so I can make sure to be there



***If you FINISH EARLY...**



*Bring other work to do Quietly

*Read a book

*Mazes, puzzles, etc.

***NO PHONES**

Textbooks



***COVER YOUR BOOK**

- Bring In PAPER BAG if you need help

Due Friday

Any Questions?



Ch.9 Notes

*Get a **BINDER** or **FOLDER**
for **This Class**

*If you need one, talk to me after class

9.1 Solving Quadratic Equations by Finding Square Roots

Goals:

- Evaluate and approximate square roots.

EQ: What are the first 11 perfect squares?



Vocabulary

Positive square root:

* All pos. #'s have 2 sq. roots \pm

Principal sq. roots $\pm \sqrt{64} = \pm 8$

8 -8

Negative square root:

Neg. sq. root

$-\sqrt{49} = (-7)$

Radicand:

inside

ex:

$\sqrt{2x+1}$

← Radical sign

$2x+1 = \text{Radicand}$

$\sqrt{2^2 \cdot x^2}$

ex: $\sqrt{25} = 5$

Perfect square: *square of an Integer*

$$1^2 = 1 \quad 2^2 = 4 \quad 4^2 = 16 \quad 6^2 = 36 \quad 8^2 = 64 \quad 10^2 = 100$$

$$3^2 = 9 \quad 5^2 = 25 \quad 7^2 = 49 \quad 9^2 = 81 \quad 11^2 = 121$$

$$12^2 = 144$$

Irrational number:

that can't be written as a quotient of 2 integers

ex: $\pi, \sqrt{2}, 2\pi, \frac{\sqrt{2}}{3}$

Radical expression:

Involves sq. roots

ex: $\sqrt{2x+3}$

Quadratic equation in standard form:

$$Ax^2 + Bx + C = 0, \quad A \neq 0$$

Leading coefficient:

in front of the highest power

ex: $3x^2 + 2x + 7 = 0$

\uparrow
3 is the leading coefficient

Example 1: Find Square Roots of Numbers

Evaluate the expression.

a) $-\sqrt{49} = -7$

b) $\sqrt{49} = 7$

c) $\sqrt{-9} = \text{Not Possible}$

d) $\sqrt{0} = 0$

Try It Find all square roots of the number or write no square roots.

1) $\sqrt{81} = \pm 9$
9 -9

2) $\sqrt{-64} = \text{Not Possible}$

3) $\sqrt{121} = \pm 11$
11 -11

4) $\sqrt{0.49} = \pm 0.7$
0.7 -0.7

Example 2: Evaluate a Radical Expression

Evaluate $\sqrt{b^2 - 4ac}$ when $a = -7$, $b = 8$, and $c = -1$.

\approx Discriminant

$$\sqrt{b^2 - 4ac} =$$

$$\sqrt{(8)^2 - 4(-7)(-1)}$$

$$= \sqrt{64 - 28}$$

$$= \sqrt{36}$$

$$= \textcircled{6}$$

Try It Evaluate $\sqrt{b^2 - 4ac}$ for the given values.

5) $a = 2$, $b = -3$, $c = -2$

$$\sqrt{(-3)^2 - 4(2)(-2)}$$

$$= \sqrt{9 + 16}$$

$$= \sqrt{25}$$

$$= \textcircled{5}$$

6) $a = 4$, $b = 9$, $c = 2$

$$\sqrt{(9)^2 - 4(4)(2)}$$

$$= \sqrt{81 - 32}$$

$$= \sqrt{49}$$

$$= \textcircled{7}$$

Example 3: Solving Quadratic Equations

± Solve each equation. Round to .01

a) $\sqrt{x^2} = \sqrt{6}$

Exact

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

Approx.
(Round)

$$x \approx \pm 2.45$$

$$x \approx 2.45$$

$$x \approx -2.45$$

b) $\sqrt{x^2} = \sqrt{144}$

$$x = \pm 12$$

$$x = 12$$

$$x = -12$$

c) $\sqrt{x^2} = \sqrt{-7}$

Not Possible

Example 4: Rewriting Before Finding Square Roots

Solve $5x^2 - 20 = 0$.

$$+20 \quad +20$$

$$\frac{5x^2}{5} = \frac{20}{5}$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = \pm 2$$

$$x = 2$$

$$x = -2$$

Try It Solve the equation or write no solution.

Round to the .01

$$7) \sqrt{x^2} = \sqrt{11}$$

$$x = \pm\sqrt{11}$$

$$x \approx \pm 3.32$$

$$8) 3x^2 - 75 = 0$$

$$\begin{aligned} &+75 \quad +75 \\ 3x^2 &= 75 \\ \frac{3x^2}{3} &= \frac{75}{3} \\ \sqrt{x^2} &= \sqrt{25} \end{aligned}$$

$$x = \pm 5$$

$$x = 5 \quad x = -5$$

$$9) 2x^2 - 22 = 50$$

$$+22 \quad +??$$

$$\frac{2x^2}{2} = \frac{72}{2}$$

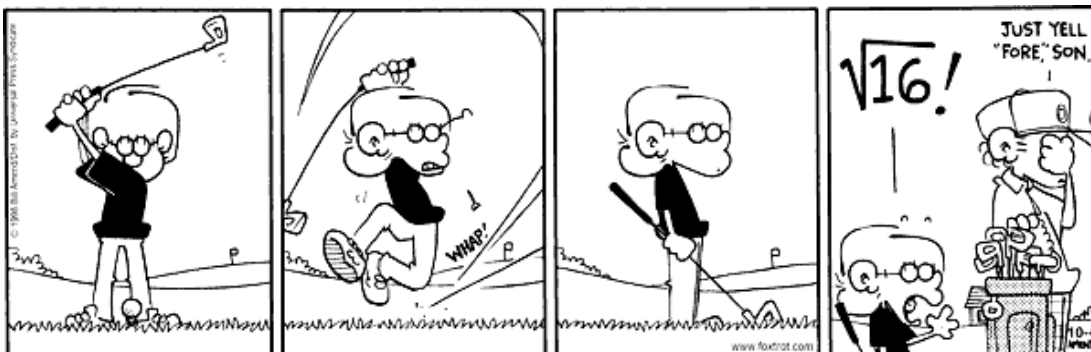
$$\sqrt{x^2} = \sqrt{36}$$

$$x = \pm 6 \quad \begin{cases} x = 6 \\ x = -6 \end{cases}$$

Summary

EQ: What are the first 11 perfect squares?

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144



9.1 Homework

- Animal Roots wkst
- Solving Equations by Taking Square Roots wkst (p.90)

SHOW WORK