

Turn in all HW assignments!

1. Tic-Tac-Toe Radicals Sheet
2. Adding & Subtracting Radicals
3. Multiplying Radicals
4. Simplifying Radicals
5. Dimensional Analysis
6. Multiplying Polynomials
7. Adding & Subtracting Polynomials

Agenda for Today 11/2/17

- 1. Turn in HW assignments**
- 2. Priority Standards Test**
- 3. Review Unit 1 Study Guide**
- 4. Questions? Come for tutoring!!!**

Unit 1 Study Guide

Polynomial Operations

1. What is the product of $8x - 3$ and $4x + 7$?

multiply

2. Find the product of $(2x - 3)(x^2 - 5x + 7)$

multiply

3. The length of a rectangle is 4 units longer than the width.

$w + 4$

- a. If the width of the rectangle is w , what expression would represent the length?
- b. What expression would represent the perimeter?

①

	$8x$	-3
$4x$	$32x^2$	$-12x$
$+7$	$56x$	-21

$$= 32x^2 + 44x - 21$$

② $x^2 - 5x + 7$

$2x$	$2x^3$	$-10x^2$	$14x$
-3	$-3x^2$	$15x$	-21

$$= 2x^3 - 13x^2 + 29x - 21$$

③a width = w

length = $w + 4$



$$P = (w+4+w) \cdot 2$$

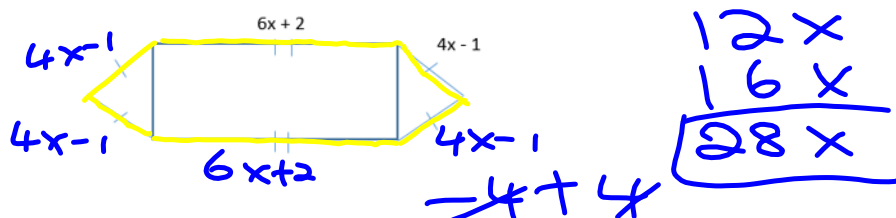
$$= (2w+4) \cdot 2$$

$$P = 4w + 8$$

4. Simplify $(9h^2 + 2h - 6) - (3h^2 - 5h + 1)$

$$\begin{array}{r}
 \quad - \quad + \quad - \quad \quad \quad 9h^2 + 2h - 6 \\
 - \quad \quad \quad \quad \quad \quad \quad 3h^2 + 5h - 1 \\
 \hline
 = \quad \quad \quad \quad \quad \quad \quad 6h^2 + 7h - 7
 \end{array}$$

5. A model of a garden is shown. What is the perimeter of the model, in terms of x ?



6. In 2014, the number of apples harvested at a local farm was represented by the expression $8x^2 + 2x + 3$. In 2015, the number of apples harvested was represented by the expression $6x^2 + 5x + 4$. Write a polynomial that represents the total number of apples harvested in 2014 and 2015, in terms of x .

$$\begin{array}{r}
 8x^2 + 2x + 3 \\
 6x^2 + 5x + 4 \\
 \hline
 14x^2 + 7x + 7
 \end{array}$$

Dimensional Analysis

Equivalence Statements: $2.54 \text{ cm} = 1 \text{ in}$; $12 \text{ in} = 1 \text{ ft}$; $365 \text{ days} = 1 \text{ yr}$; $60 \text{ min} = 1 \text{ hr}$; $60 \text{ s} = 1 \text{ min}$; $100 \text{ cm} = 1 \text{ m}$; $1 \text{ cm} = 10 \text{ mm}$

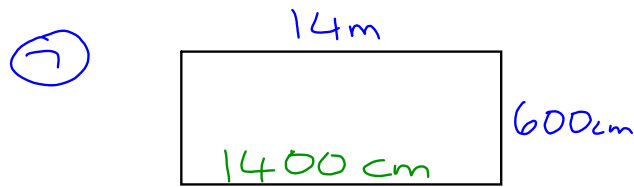
7. A rectangle has a length of 14 meters and a width of 600 centimeters. What is the perimeter, in centimeters, of the rectangle?
8. Convert 70 miles per hour to feet per second.
9. Convert 8.2 centimeters per year to millimeters per day.
10. What is the equivalent of 3.5 yards in centimeters?

K H D B D C M

**meters
grams
liters**

$$36 \text{ inches} = 1 \text{ yd}$$

$$1 \text{ inch} = 2.54 \text{ cm.}$$



$$14m \rightarrow cm$$

$$14 \times 100 = 1400 cm$$

$$P = 4000 cm$$

⑧ $\frac{70 \text{ miles}}{1 \text{ hr}} \rightarrow \frac{\text{ft}}{\text{Sec.}}$

$$\frac{70 \text{ miles}}{1 \text{ hr}} \times \frac{5280 \text{ ft}}{1 \text{ mile}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{1 \text{ min}}{60 \text{ sec}}$$

$$\frac{70 \times 5280}{60 \times 60} = \frac{369600}{3600}$$

$$= 102.7 \text{ ft/sec}$$

⑨ $\frac{8.2 \text{ cm}}{1 \text{ year}} \rightarrow \frac{\text{mm}}{\text{day}}$

$$\frac{8.2 \text{ cm}}{1 \text{ yr}} \times \frac{10 \text{ mm}}{1 \text{ cm}} \times \frac{1 \text{ yr}}{365 \text{ days}}$$

$$\frac{8.2 \times 10}{365} = \frac{82}{365}$$

$$= 0.225 \text{ mm/day}$$

⑩ $3.5 \text{ yds} \rightarrow \text{cm}$

$$3.5 \text{ yds} \times \frac{36 \text{ inch}}{1 \text{ yd}} \times \frac{2.54 \text{ cm}}{1 \text{ inch}}$$

$$= 3.5 \times 36 \times 2.5$$

$$= 320.04 \text{ cm}$$

Radical Operations

11. Look at the radical.

$$-4\sqrt{60}$$

What is the rewritten form of the radical?

a. $-2\sqrt{15}$

b. $-6\sqrt{15}$

c. $-8\sqrt{15}$

d. $-8\sqrt{8}$

12. $-3\sqrt{54} - 5\sqrt{54}$

$$-24\sqrt{6}$$

13. $-2\sqrt{6} + 5\sqrt{24}$

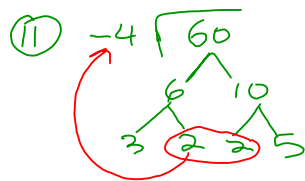
$$8\sqrt{6}$$

14. $\sqrt{27} + 5\sqrt{12}$

$$13\sqrt{3}$$

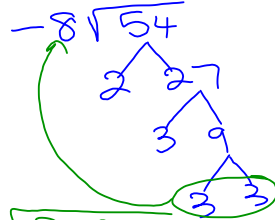
15. $-4\sqrt{18} - \sqrt{8}$

$$-14\sqrt{2}$$



$$\boxed{-8\sqrt{15}}$$

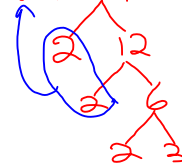
⑫ $-3\sqrt{54} - 5\sqrt{54}$



$$-8 \cdot 3\sqrt{2 \cdot 3}$$

$$\boxed{-24\sqrt{6}}$$

⑬ $-2\sqrt{6} + 5\sqrt{24}$



$$\begin{aligned} & -2\sqrt{6} + 10\sqrt{6} \\ & = \boxed{8\sqrt{6}} \end{aligned}$$

⑭ $\sqrt{27} + 5\sqrt{12}$



$$\textcircled{3}\sqrt{3} + \textcircled{10}\sqrt{3}$$

$$\boxed{13\sqrt{3}}$$

⑮ $-4\sqrt{18} - \sqrt{18}$



$$-4 \cdot 3\sqrt{2} - 2\sqrt{2}$$

$$= \textcircled{-12}\sqrt{2} - \textcircled{2}\sqrt{2}$$

$$= \boxed{-14\sqrt{2}}$$

16. Look at the expression.

$$3\sqrt{10} \cdot \sqrt{24}$$

Which of these is equivalent to this expression?

a. $3\sqrt{34}$

b. $4\sqrt{5}$

c. $12\sqrt{15}$

d. $7\sqrt{15}$

17. $\sqrt{3}(\sqrt{8} + 5)$

$\sqrt{24} + 5\sqrt{3}$

4 6

2 2

$2\sqrt{6} + 5\sqrt{3}$

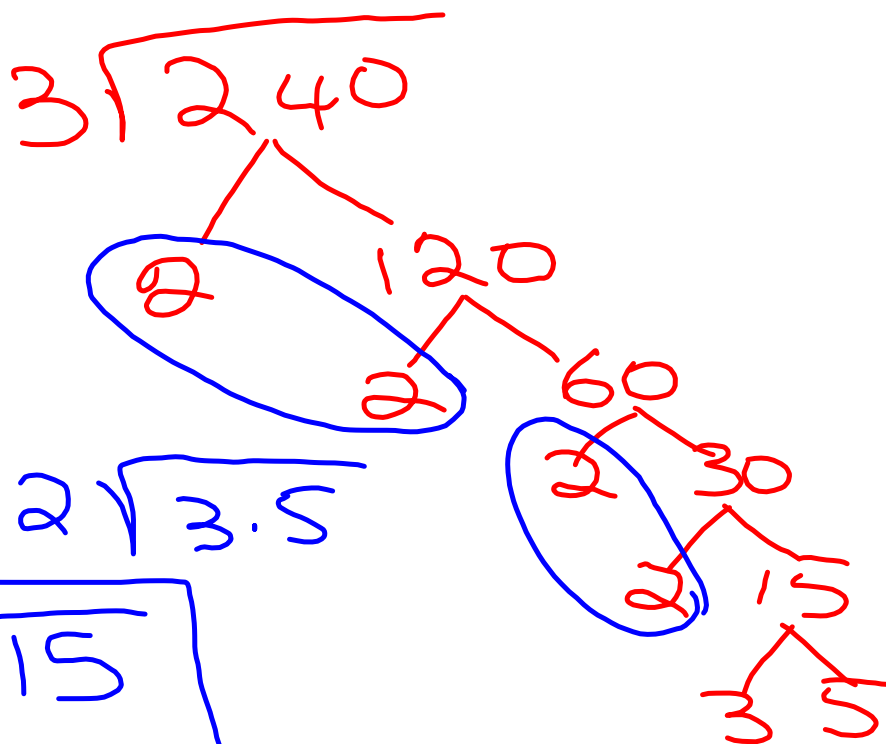
18. $(\sqrt{3} - 2)(\sqrt{3} + 3)$

	$\sqrt{3}$	-2
$\sqrt{3}$	$\sqrt{9}$	$-2\sqrt{3}$
$+3$	$3\sqrt{3}$	-6

$3 + \sqrt{3}(-6)$

$= -3\sqrt{3}$

⑩ $3\sqrt{10} \cdot \sqrt{24}$



$3 \cdot 2 \cdot 2 \sqrt{3 \cdot 5}$

$12\sqrt{15}$

19. Which product is irrational?

a. $\sqrt{6} \cdot \sqrt{6}$

$\sqrt{36} = 6$

b. $\sqrt{49} \cdot \sqrt{25}$

$7 \cdot 5 = 35$

c. $\sqrt{2} \cdot \sqrt{32}$

$\sqrt{64} = 8$

d. $\sqrt{12} \cdot \sqrt{2}$

$\sqrt{24} = 2\sqrt{6}$

20. Which sum is rational?

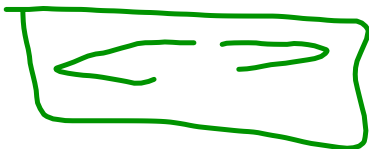
~~a. $\sqrt{5} + 2.1$~~

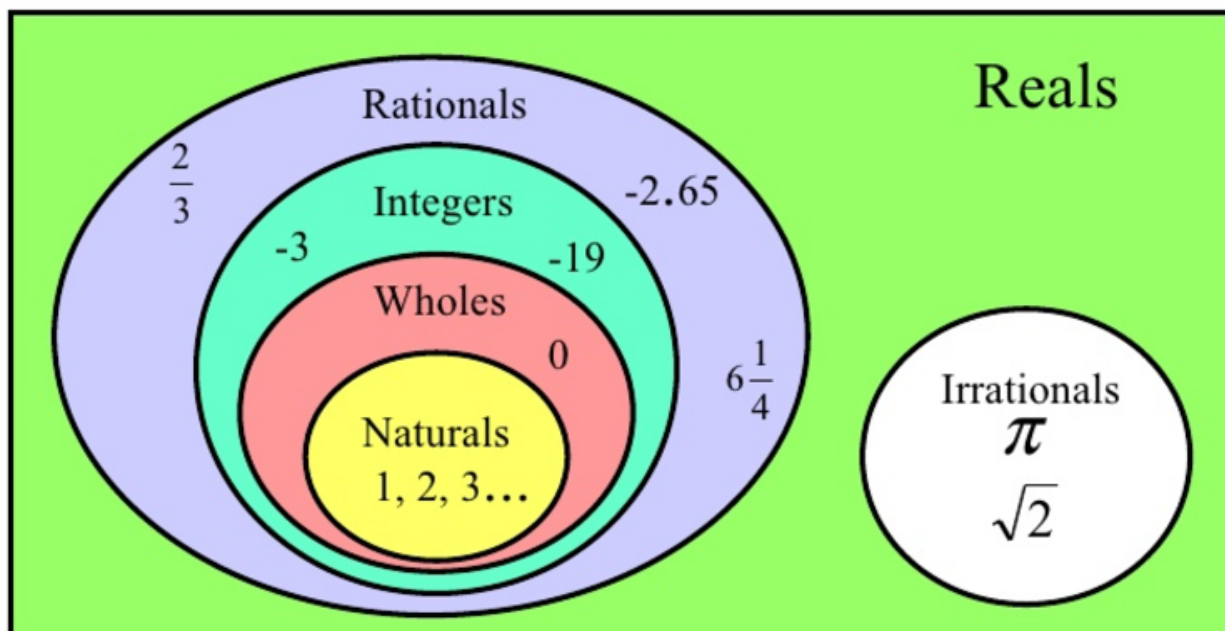
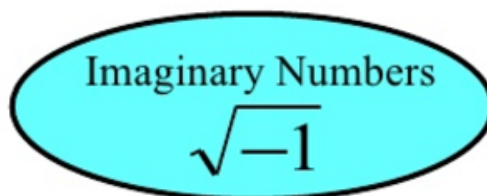
b. $\sqrt{9} + 6.25$

~~c. $\sqrt{3} + \pi$~~

~~d. $\pi + 12$~~

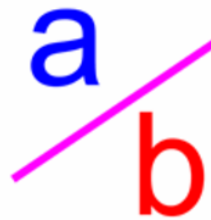
$4.3360679 + 0.25 = \frac{37}{4}$





Definition of

Rational Number


$$\frac{a}{b}$$

A number that can be made by dividing two integers. (An integer is a number with no fractional part.)

The word comes from "ratio".

Examples:

- $1/2$ is a rational number (1 divided by 2, or the ratio of 1 to 2)
- 0.75 is a rational number ($3/4$)
- 1 is a rational number ($1/1$)
- 2 is a rational number ($2/1$)
- 2.12 is a rational number ($212/100$)
- -6.6 is a rational number ($-66/10$)

Definition of

Irrational Number

[more ...](#)

A real number that can **NOT** be made by dividing two integers. (Note: an integer has no fractions.)

Its decimal goes on forever without repeating.

Example: Pi is an irrational number (it can't be made by dividing two integers)

$$1.5 = \frac{3}{2} \xrightarrow{\text{Ratio}} \\ \text{Rational}$$

See: [Rational Number](#)

$$\pi = 3.14159... = \frac{?}{?} \text{ (No Ratio)} \\ \text{Irrational}$$