

“You can’t get much done in life if you only work on the days you feel good.”

-Jerry West,

WVU basketball All America and NBA Hall of Famer

Simplifying (6.1 and 6.2)

-Properties of Exponents

- Same Bases \leftarrow mult \rightarrow add
- Power to a Power \rightarrow div \rightarrow sub
- Negatives \rightarrow mult
- Negatives \rightarrow move

-Properties of Radicals

- No Radicals in Denominator
- No Perfect Roots under Radical

1) $(5 - 2i)^2$

$5^2 - 2^2i^2$

$25 - 4i^2$

$25 + 4$

29

What's wrong?

Write out twice & multiply

How should you work the problem?

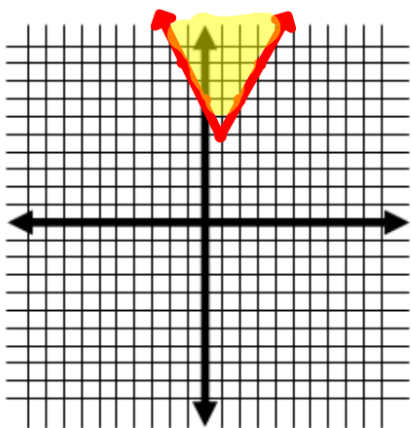
$(5 - 2i)(5 - 2i)$

$25 - 10i - 10i + 4i^2$

$25 - 20i - 4$

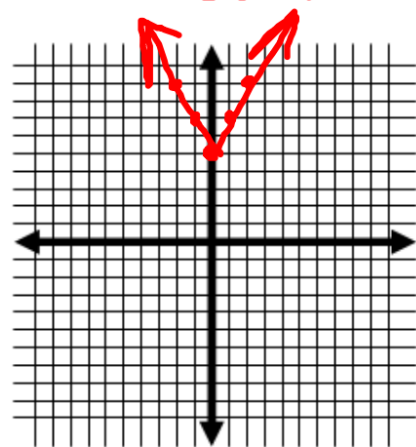
$21 - 20i$

2) Graph
 $y = 2|x| + 5$



no shading

Vertex



3) Solve $|2x + 12| = 4x$

$$2x + 12 = 4x$$

$$12 = 2x$$

$$6 = x \quad \text{or}$$

$$2x + 12 = -4x$$

$$12 = -6x$$

$$-2 = x$$

check

-2 is extraneous

4) $|-6a - 6| - 9 < 45$

$$9|-6a - 6| - 9 < 45 \quad \text{and} \quad 9|-6a - 6| - 9 > -45$$

$$9|-6a - 6| < 54$$

$$-6a - 6 < 6$$

$$-6a < 12$$

$$a > -2 \quad \text{and}$$

$$9|-6a - 6| > -36$$

$$-6a - 6 > -4$$

$$-6a > 2$$

$$a < -1/3$$

Get abs. value
by itself
first

$$9|-6a - 6| - 9 < 45$$

+9 +9

$$9|-6a - 6| < 54$$

9

$$|-6a - 6| < 6$$

↙ ↘

5) What is the value of $\left(\frac{2}{5}\right)^{-3}$

$$\frac{-6}{-15} \quad \frac{15}{6}$$

$$\frac{2^{-3}}{5^{-3}} = \frac{5^3}{2^3} = \frac{125}{8}$$

multiply exponents,
not bases

6) $\frac{7}{\sqrt{12}} \frac{\sqrt{12}}{\sqrt{12}} = \frac{7\sqrt{12}}{12}$

simplify $\sqrt{12}$

$$\frac{7\sqrt{4 \cdot 3}}{12} = \frac{7 \cdot 2\sqrt{3}}{12} = \frac{14\sqrt{3}}{12} = \frac{7\sqrt{3}}{6}$$

$$7) \frac{5}{4-\sqrt{3}} \cdot \frac{4+\sqrt{3}}{4+\sqrt{3}}$$

don't combine

$$\frac{20 + 5\sqrt{3}}{16 - 3}$$

$$\frac{\cancel{25\sqrt{3}}}{\cancel{13}} \quad \frac{20}{13} + \frac{5\sqrt{3}}{13}$$

$$\begin{array}{l} -3x - x \\ -4x \end{array}$$

$$8) \frac{3-\sqrt{3}}{1+\sqrt{3}} \cdot \frac{1-\sqrt{3}}{1-\sqrt{3}}$$

combine like terms

$$\frac{3 - 3\sqrt{3} - \sqrt{3} + 3}{1 - 3}$$

$$\frac{6 - 3\sqrt{3} - \sqrt{3}}{-2}$$

→

$$\frac{6 - 4\sqrt{3}}{-2}$$

$$-\frac{6}{2} + \frac{4\sqrt{3}}{2}$$

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

9) $\left(\frac{5x^3y}{7xy^{-8}}\right)^2$

~~$\frac{10x^6y^2}{14x^2y^{-64}}$~~

$\frac{5x^4y^{66}}{7}$

~~$\frac{25x^6y^2}{49x^2y^{-16}}$~~

~~$\frac{25x^4y^{18}}{49}$~~

10) Which of the following is in reduced radical form?

cannot be reduced further!)

~~F) $\sqrt{50}$~~

~~G) $\sqrt{\frac{31}{4}}$~~

H) $\frac{3\sqrt{5}}{8}$

~~J) $\frac{7}{\sqrt{2}}$~~

WHY?

11) What is the goal of RATIONALIZING?

get radical out of denominator

How to prepare for Unit 1 Test

Figure out what you know and what you don't!

1) Complete Review and check answers online

2) Complete Summary Sheet Problems and Check

3) Review old quizzes

Don't just look at a problem --

Try working it out on your own

****Get questions answered before you come to class.**

We will not have time in class!