



Nov 14th 2:33:57 am

Hey Makenzie - welcome back 😊

Nov 14th 2:33:59 am

You are being connected to a tutor right now!

Nov 14th 2:34:01 am

👉 Okay!

Nov 14th 2:34:03 am

Have you started on the problem at all?

Nov 14th 2:34:06 am

TUTOR FOUND, NOW REVIEWING PROBLEM AT NO CHARGE

Nov 14th 2:34:06 am

📷 your work and share with your tutor. There's no such thing as sharing too little work 😊

Nov 14th 2:34:08 am

No picture

Nov 14th 2:34:13 am

That's fine! 😊 Your tutor will be ready soon.

Nov 14th 2:34:16 am

Got it!

Nov 14th 2:34:18 am

Well.... while we wait, here's a tip to make your Yup experience even better 🏆

Nov 14th 2:34:20 am

All Yup tutors are real people, so please treat them with respect. ❤️

Nov 14th 2:34:24 am

Nov 14th 2:34:27 am

Hi Makenzie!

Nov 14th 2:35:07 am

Welcome to Yup!

Nov 14th 2:35:10 am

Hi

Nov 14th 2:35:11 am

I don't know where to start with this problem

Nov 14th 2:35:31 am

Do you have any guess on how to solve it? Relating it to your past lessons in Math class. :)

Nov 14th 2:36:00 am

No

Nov 14th 2:36:07 am

Don't worry because I will do my best to guide you. :)

Nov 14th 2:37:02 am

Are you ready?

Nov 14th 2:37:05 am

Ya

Nov 14th 2:37:12 am

First, are you familiar with conjugates?

Nov 14th 2:37:23 am

Only in spanish

Nov 14th 2:37:36 am

What do you mean by that?

Nov 14th 2:37:50 am

It's how you change a word in Spanish

Nov 14th 2:38:49 am

For math I don't know what a conjugate it

Nov 14th 2:38:58 am

Is*

Nov 14th 2:39:00 am

Oh.

Nov 14th 2:39:00 am

What about rationalizing, what do you know about it?

Nov 14th 2:39:16 am

Not much

Nov 14th 2:39:28 am

I'm bad at algebra

Nov 14th 2:39:33 am

It's alright. We can start from what you know about it. :)

Nov 14th 2:39:48 am

Can you tell me what you know about it?

Nov 14th 2:39:53 am

I don't know where do start with this problem because it's a fraction

Nov 14th 2:40:19 am

What happens in rationalizing? :)

Nov 14th 2:40:41 am

Rationalizing happens when we have fractions.

Nov 14th 2:41:18 am

Okay

Nov 14th 2:41:47 am

Rationalizing the Denominator

Eliminating the roots in fractions is what Rationalizing the Denominator really means.

Here is our fraction:

$$\frac{3}{\sqrt{5}-\sqrt{2}}$$

Step 1: Conjugate the denominator by changing the sign:

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

Step 2: Now we form a fraction with the conjugate as both denominator and numerator:

$$\frac{\sqrt{5}+\sqrt{2}}{\sqrt{5}+\sqrt{2}}$$

Step 3 next....

Nov 14th 2:42:26 am

I have posted the steps in rationalizing.

Nov 14th 2:42:34 am

Can you see the image?

Nov 14th 2:42:39 am

Ya

Nov 14th 2:43:05 am

So do I have to make -3 and -9i positive?

Nov 14th 2:43:16 am

Not quite. But almost there!

Nov 14th 2:44:15 am

We are to change to sign of the middle term only.

Nov 14th 2:44:29 am

Because that's what happens in conjugates.

Nov 14th 2:44:42 am

Having heard that, is it clear now on what a conjugate is?

Nov 14th 2:45:00 am

So just -9i??

Nov 14th 2:45:25 am

Oh wait

Nov 14th 2:45:32 am

So I just change the middle negative sign to a positice

Nov 14th 2:45:49 am

Positive*

Nov 14th 2:45:59 am

Woohoo! You are right :)

Nov 14th 2:46:12 am

Okay

Nov 14th 2:46:20 am

That's what we will multiply.

Nov 14th 2:46:25 am

Is that clear?

Nov 14th 2:46:31 am

No

Nov 14th 2:46:50 am

What's what we will multiply

Nov 14th 2:46:59 am

I'll post step 3.

Nov 14th 2:47:04 am

This fraction is = to 1

$$\frac{\sqrt{5} + \sqrt{2}}{\sqrt{5} + \sqrt{2}}$$

Step 3:

Now we multiply our original fraction by our new fraction:

$$\frac{3}{\sqrt{5} - \sqrt{2}} \times \frac{\sqrt{5} + \sqrt{2}}{\sqrt{5} + \sqrt{2}}$$
$$= \frac{3(\sqrt{5} + \sqrt{2})}{5 - 2}$$
$$= \sqrt{5} + \sqrt{2}$$

Nov 14th 2:47:10 am

Can you see the image?

Nov 14th 2:47:13 am

Ya

Nov 14th 2:47:29 am

That's what we are going to do.

Nov 14th 2:47:54 am

We multiply our original fraction by our new fraction.

Nov 14th 2:48:12 am

Can you tell me what our new fraction is?

Nov 14th 2:48:19 am

2+4i/-3+9i ?

Nov 14th 2:48:45 am

Not quite.

Nov 14th 2:49:43 am

Note that our original fraction is $(2+4i)/(-3-9i)$.

Nov 14th 2:50:04 am

Looking at the second image that I sent you, what should our new fraction be?

Nov 14th 2:50:21 am

I don't know

Nov 14th 2:51:23 am

What was the conjugate of our denominator?

Nov 14th 2:51:37 am

I changed the sign

Nov 14th 2:52:07 am

And what is that value?

Nov 14th 2:52:48 am

Do I add 3+9i ?

Nov 14th 2:53:15 am

-3*

Nov 14th 2:53:25 am

You are correct that -3+9i is the conjugate.

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Okay

Nov 14th 2:54:07 am

So 6

Nov 14th 2:54:18 am

Then according to our steps, we would multiply that to the numerator and denominator.

Nov 14th 2:54:20 am

Of our original fraction.

Nov 14th 2:54:28 am

You can take a look at the 2nd image that I have sent you.

Nov 14th 2:54:46 am

Do I have to add the numerator too

Nov 14th 2:55:16 am

Take note: MULTIPLY.

Nov 14th 2:55:57 am

Not add.

Nov 14th 2:55:59 am

This fraction is = to 1

$$\frac{\sqrt{5} + \sqrt{2}}{\sqrt{5} + \sqrt{2}}$$

Step 3:

Now we multiply our original fraction by our new fraction:

$$\frac{3}{\sqrt{5} - \sqrt{2}} \times \frac{\sqrt{5} + \sqrt{2}}{\sqrt{5} + \sqrt{2}}$$
$$= \frac{3(\sqrt{5} + \sqrt{2})}{5 - 2}$$
$$= \sqrt{5} + \sqrt{2}$$

Nov 14th 2:56:09 am

Observe what happened in the second image. :)

Nov 14th 2:56:14 am

No like do I have to add 2+4i ?

Nov 14th 2:56:21 am

No.

Nov 14th 2:56:53 am

We already got our conjugate. Right?

Nov 14th 2:57:13 am

Ya

Nov 14th 2:57:20 am

Now we will multiply that to our original fraction's numerator and denominator.

Nov 14th 2:57:59 am

So I take 2+4i and -3+9i and multiply those by 6?

Nov 14th 2:58:37 am

So for example, our conjugate is 1+i, then our new fraction is: (1+i)/(1+i).

Nov 14th 2:58:41 am

Student ended session
Nov 14th 2:59:04 am