SWBAT: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Warm Up

**Multiply**

1. $\sqrt{13}(4)$ 2. $\sqrt{3}(6\sqrt{10})$ 3. $(3-\sqrt{2})(3+\sqrt{2})$

**In the math community, we do not leave the square roots ( or any other radial) in the denominator. Instead we use a process called Rationalization to remove it from the denominator.**

Examples:

|  |  |  |
| --- | --- | --- |
| $$\frac{1}{\sqrt{2}}$$ | $$\frac{1}{\sqrt{3}}$$ | $$\frac{3}{\sqrt{5}}$$ |
| $$\frac{1}{2\sqrt{2}}$$ | $$\frac{2}{5\sqrt{3}}$$ | $$\frac{4}{3\sqrt{7}}$$ |
| $$\frac{3}{\sqrt{11}}$$ | $$\frac{2}{3\sqrt{7}}$$ |  |

When the denominator has a binomial with a square root, we have to apply to conjugate.

Ex. The conjugate of $(x+3)$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ex. The conjugate of $(2-5x)$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ex. The conjugate of $3+\sqrt{7}$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| $$\frac{1}{1+\sqrt{2}}$$ | $$\frac{1}{1-\sqrt{3}}$$ | $$\frac{1}{2-\sqrt{5}}$$ |
| $$\frac{1}{2+\sqrt{2}}$$ | $$\frac{3}{2+\sqrt{5}}$$ | $$\frac{1}{7-\sqrt{3}}$$ |