

Algebra /

Rationalizing a denominator using conjugates: Integer numerator

$$\frac{5}{(3\sqrt{3} + 4)(3\sqrt{3} - 4)} \text{ FOIL}$$

$$\frac{15\sqrt{3} - 20}{27 - 16}$$

$$\frac{15\sqrt{3} - 20}{11}$$

Conjugate
 $a + b$
 $a - b$

Inside $\times$ Inside
 Outside $\times$ Outside

Top
 $15\sqrt{3} - 20$

Bottom
 $9\sqrt{9} - 12\sqrt{3} + 12\sqrt{3} - 16$
 $27 - 16$
 11