

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 001- Term 061

Name: _____ **S/N:** ____ **ID:** _____ **Sec:** ____

Question1:

Rationalize the denominator of $\frac{3\sqrt{2} - 2\sqrt{3}}{2\sqrt{2} + 3\sqrt{3}}$. Write the result in the simplest form.

Solution

$$\frac{3\sqrt{2} - 2\sqrt{3}}{2\sqrt{2} + 3\sqrt{3}} = \frac{3\sqrt{2} - 2\sqrt{3}}{2\sqrt{2} + 3\sqrt{3}} \cdot \frac{2\sqrt{2} - 3\sqrt{3}}{2\sqrt{2} - 3\sqrt{3}} = \frac{6(2) - 9\sqrt{6} - 4\sqrt{6} + 6(3)}{4(2) - 9(3)} = \frac{12 - 13\sqrt{6} + 18}{8 - 27} = \frac{30 - 13\sqrt{6}}{-19}$$