Math 2201 Multiplying and Dividing Radicals
Sec 4.3 Worksheet

1. Express as a single radical in mixed radical form, where possible.

a). $\sqrt{5} \times \sqrt{6}$

b). $\sqrt{7} \times \sqrt{8}$

c). $\sqrt{12} \times \sqrt{10}$

d). $3\sqrt{5} \times \sqrt{15}$

e). $-\sqrt{26} \times -3\sqrt{10} \times -\sqrt{3}$

f). $\sqrt{105} \times \sqrt{15} \times 2\sqrt{25}$

2. Expand and simplify.

a). $\sqrt{2}\left(4 + 5\sqrt{3}\right)$

b). $-7\sqrt{6}\left(6\sqrt{8} - 2\right)$

c). $\left(\sqrt{3} + \sqrt{7}\right)\left(5 + 2\sqrt{10}\right)$

d). $\left(3\sqrt{5} - 4\right)^2$

e). $\left(2\sqrt{3} + 3\sqrt{5}\right)\left(2\sqrt{3} - 3\sqrt{5}\right)$

f). $\left(-\sqrt{7} + 2\sqrt{11}\right)^2$

3. Simplify. Express your answer in simplest form.

a). $\frac{2\sqrt{10}}{\sqrt{5}}$

b). $\frac{-13\sqrt{12}}{26\sqrt{6}}$

c). $\frac{12\sqrt{7}}{-2\sqrt{7}}$

d). $\frac{27\sqrt{15}}{-9\sqrt{3}}$

e). $\frac{-2\sqrt{96}}{\sqrt{8}}$

f). $\frac{8\sqrt{8}}{-2\sqrt{2}}$

4. Rationalize the denominator in each expression.

a). $\frac{\sqrt{10}}{\sqrt{3}}$

b). $\frac{-3}{2\sqrt{5}}$

c). $\frac{5\sqrt{10}}{\sqrt{7}}$

d). $\frac{-3\sqrt{50}}{\sqrt{3}}$

e). $\frac{2\sqrt{2}-\sqrt{5}}{3\sqrt{5}}$

f). $\frac{\sqrt{5}+2\sqrt{3}}{\sqrt{3}}$