

AA PREP: OPERATIONS WITH RADICALS (QUOTIENTS)—WORKSHEET #1

Simplify. Rationalize the denominator.

$$1) \frac{10}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{2 \cdot 10 \sqrt{5}}{1 \cdot 5} = \boxed{2\sqrt{5}}$$

$$2) \frac{24}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{4 \cdot 24 \sqrt{6}}{1 \cdot 6} = \boxed{4\sqrt{6}}$$

$$3) \sqrt{\frac{2}{5}} = \frac{\sqrt{2}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \boxed{\frac{\sqrt{10}}{5}}$$

$$4) \sqrt{\frac{10}{7}} = \frac{\sqrt{10}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \boxed{\frac{\sqrt{70}}{7}}$$

$$5) \sqrt{\frac{50 \div 10}{60 \div 10}} = \sqrt{\frac{5}{6}} = \frac{\sqrt{5}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \boxed{\frac{\sqrt{30}}{6}}$$

$$6) \sqrt{\frac{25}{16}} = \frac{\sqrt{25}}{\sqrt{16}} = \boxed{\frac{5}{4}}$$

$$7) \frac{\sqrt{10} \div 5}{\sqrt{35} \div 5} = \frac{\sqrt{2}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \boxed{\frac{\sqrt{14}}{7}}$$

$$8) \frac{\sqrt{12} \div 12}{\sqrt{24} \div 12} = \frac{\sqrt{1}}{\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{\sqrt{2}}{2}}$$

$$9) \frac{1 \cdot 5 \sqrt{2}}{4 \cdot 20 \sqrt{3}} = \frac{\sqrt{2}}{4 \sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{6}}{4 \cdot 3} = \boxed{\frac{\sqrt{6}}{12}}$$

$$10) \frac{2 \cdot 16 \sqrt{5}}{1 \cdot 8 \sqrt{6}} = \frac{2 \sqrt{5}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{2 \sqrt{30}}{6} = \boxed{\frac{\sqrt{30}}{3}}$$

$$11) \frac{4 \cdot 44 \sqrt{15} \div 5}{3 \cdot 33 \sqrt{10} \div 5} = \frac{4 \sqrt{3}}{3 \sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{4 \sqrt{6}}{3 \cdot 2} = \frac{2 \sqrt{6}}{3} = \boxed{\frac{2\sqrt{6}}{3}}$$

$$12) \frac{5 \cdot 20 \sqrt{2} \div 2}{3 \cdot 12 \sqrt{10} \div 2} = \frac{5 \sqrt{1}}{3 \sqrt{5}} = \frac{5}{3 \sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{5 \sqrt{5}}{3 \cdot 5} = \frac{\sqrt{5}}{3} = \boxed{\frac{\sqrt{5}}{3}}$$