

AA PREP: OPERATIONS WITH RADICALS (QUOTIENTS)—WORKSHEET #2

Simplify. Rationalize the denominator.

$$1) \frac{18}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6 \cdot \cancel{18} \sqrt{3}}{1 \cdot \cancel{3}} = \boxed{6\sqrt{3}}$$

$$2) \frac{25}{\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} = \frac{5 \cdot \cancel{25} \sqrt{10}}{2 \cdot \cancel{10}} = \boxed{\frac{5\sqrt{10}}{2}}$$

$$3) \sqrt{\frac{5}{3}} = \frac{\sqrt{5}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{\sqrt{15}}{3}}$$

$$4) \sqrt{\frac{11 \div 11}{33 \div 11}} = \sqrt{\frac{1}{3}} = \frac{\sqrt{1}}{\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{\sqrt{3}}{3}}$$

$$5) \sqrt{\frac{81}{64}} = \frac{\sqrt{81}}{\sqrt{64}} = \boxed{\frac{9}{8}}$$

$$6) \sqrt{\frac{28 \div 7}{21 \div 7}} = \sqrt{\frac{4}{3}} = \frac{\sqrt{4}}{\sqrt{3}} = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{2\sqrt{3}}{3}}$$

$$7) \frac{\sqrt{22} \div 11}{\sqrt{33} \div 11} = \frac{\sqrt{2}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{\sqrt{6}}{3}}$$

$$8) \frac{\sqrt{50} \div 10}{\sqrt{20} \div 10} = \frac{\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \boxed{\frac{\sqrt{10}}{2}}$$

$$9) \frac{2 \cdot \cancel{6} \sqrt{5}}{1 \cdot \cancel{3} \sqrt{2}} = \frac{2\sqrt{5}}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{2\sqrt{10}}{2} = \boxed{\sqrt{10}}$$

$$10) \frac{6 \cdot \cancel{24} \sqrt{2}}{7 \cdot \cancel{28} \sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}} = \frac{6\sqrt{14}}{7 \cdot 7} = \boxed{\frac{6\sqrt{14}}{49}}$$

$$11) \frac{3 \cdot \cancel{39} \sqrt{20} \div 10}{2 \cdot \cancel{26} \sqrt{50} \div 10} = \frac{3\sqrt{2}}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{3\sqrt{10}}{2 \cdot 5} = \boxed{\frac{3\sqrt{10}}{10}}$$

$$12) \frac{8 \cdot \cancel{16} \sqrt{12} \div 4}{9 \cdot \cancel{18} \sqrt{8} \div 4} = \frac{8\sqrt{3}}{9\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{6}}{9 \cdot 2} = \frac{4\sqrt{6}}{9} = \boxed{\frac{4\sqrt{6}}{9}}$$