

Coordinate Algebra
Quiz Review - Radicals

Name: Key - Perfect Squares Method

$$1. \sqrt{27} =$$

$$\sqrt{9 \cdot 3}$$

$$\boxed{3\sqrt{3}}$$

$$2. \sqrt{75} =$$

$$\sqrt{25 \cdot 3}$$

$$\boxed{5\sqrt{3}}$$

$$3. -2\sqrt{72} =$$

$$-2 \cdot 6\sqrt{2}$$

$$\boxed{-12\sqrt{2}}$$

$$4. 5\sqrt{144} =$$

$$5 \cdot 12$$

$$\boxed{60}$$

$$5. \sqrt{25n^4} =$$

$$\boxed{5n^2}$$

$$6. \sqrt{72xy^3} =$$

$$\sqrt{36 \cdot 2 \cdot y^2 \cdot y}$$

$$6y\sqrt{2xy}$$

$$\boxed{6y\sqrt{2xy}}$$

$$7. \sqrt{192a^{12}b^5} =$$

$$\sqrt{64 \cdot 3 \cdot a^{12} \cdot b^4 \cdot b}$$

$$8\sqrt{3} \cdot a^6 \cdot b^2 \cdot \sqrt{b}$$

$$\boxed{8a^6b^2\sqrt{3b}}$$

$$8. \sqrt{m^{15}n^4p^{23}} =$$

$$m^7n^2p^{11}\sqrt{mp}$$

$$\boxed{m^7n^2p^{11}\sqrt{mp}}$$

$$9. \sqrt{3} \cdot \sqrt{5} =$$

$$\boxed{\sqrt{15}}$$

$$10. \sqrt{6} \cdot \sqrt{6} =$$

$$\sqrt{36}$$

$$\boxed{6}$$

$$11. 4\sqrt{2} \cdot 6\sqrt{11} =$$

$$24\sqrt{22}$$

$$\boxed{24\sqrt{22}}$$

$$12. 2\sqrt{12} \cdot \sqrt{6} =$$

$$2\sqrt{72}$$

$$\sqrt{36 \cdot 2}$$

$$2 \cdot 6\sqrt{2}$$

$$\boxed{12\sqrt{2}}$$

$$13. 4\sqrt{5} - 3\sqrt{5} =$$

$$\boxed{\sqrt{5}}$$

$$14. \sqrt{7} + \sqrt{7} =$$

$$\boxed{2\sqrt{7}}$$

$$15. \sqrt{20} - \sqrt{5} =$$

$$\sqrt{4 \cdot 5} - \sqrt{5}$$

$$2\sqrt{5} - 1\sqrt{5}$$

$$\boxed{\sqrt{5}}$$

$$16. 2\sqrt{27} - 5\sqrt{3} =$$

$$\sqrt{9 \cdot 3}$$

$$2 \cdot 3\sqrt{3} - 5\sqrt{3}$$

$$6\sqrt{3} - 5\sqrt{3}$$

$$\boxed{\sqrt{3}}$$

$$17. 3\sqrt{2} + \sqrt{8} =$$

$$\sqrt{4 \cdot 2}$$

$$3\sqrt{2} + 2\sqrt{2}$$

$$\boxed{5\sqrt{2}}$$

$$18. \sqrt{48} + 4\sqrt{3} =$$

$$\sqrt{16 \cdot 3}$$

$$4\sqrt{3} + 4\sqrt{3}$$

$$\boxed{8\sqrt{3}}$$

$$19. \sqrt{44} + 7\sqrt{11} =$$

$$\sqrt{4 \cdot 11}$$

$$2\sqrt{11} + 7\sqrt{11}$$

$$\boxed{9\sqrt{11}}$$

$$20. 4\sqrt{6} - \sqrt{54} =$$

$$\sqrt{9 \cdot 6}$$

$$4\sqrt{6} - 3\sqrt{6}$$

$$\boxed{\sqrt{6}}$$

$$21. -\sqrt{3} - 3\sqrt{6} + 3\sqrt{3} =$$

$$\boxed{2\sqrt{3} - 3\sqrt{6}}$$

$$22. -3\sqrt{8} - \sqrt{81} + 3\sqrt{2} =$$

$$\sqrt{4 \cdot 2}$$

$$-3 \cdot 2\sqrt{2} - 9 + 3\sqrt{2}$$

$$-6\sqrt{2} - 9 + 3\sqrt{2}$$

$$\boxed{-3\sqrt{2} - 9}$$

$$23. -3\sqrt{24} + \sqrt{54} - 3\sqrt{54} =$$

$$\sqrt{4 \cdot 6} \quad \sqrt{9 \cdot 6} \quad \sqrt{9 \cdot 6}$$

$$-3 \cdot 2\sqrt{6} + 3\sqrt{6} - 3 \cdot 3\sqrt{6}$$

$$-6\sqrt{6} + 3\sqrt{6} - 9\sqrt{6}$$

$$\boxed{-12\sqrt{6}}$$