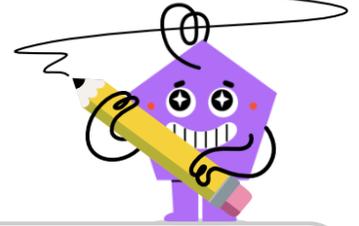# Radicals - Adding and Subtracting (Values and Variables)

1 Simplify, then add or subtract the radical expressions

$$\sqrt{176q^2y} + \sqrt{99q^2y} - \sqrt{28y}$$

A $7q\sqrt{11y} - 2\sqrt{7y}$

B $7q\sqrt{11y^2} - 2\sqrt{7y}$

2 Simplify, then add or subtract the radical expressions

$$\sqrt[3]{88ym^3} + \sqrt[3]{54m^3} - \sqrt[3]{54m^3}$$

A $2m\sqrt[3]{11y} + m\sqrt[3]{2}$

B $2m\sqrt[3]{11y}$

3 Simplify, then add or subtract the radical expressions

$$\sqrt[3]{56qy^2} + \sqrt[3]{704q} - \sqrt[3]{189qy^2}$$

A $-1\sqrt[3]{7qy^2} + 4\sqrt[3]{11q}$

B $\sqrt[3]{6q^2y^2} + 2\sqrt[3]{12q} - 2\sqrt[3]{9q^3y^4}$

4 Simplify, then add or subtract the radical expressions

$$\sqrt{99t^4q^4} + \sqrt{20q} + \sqrt{80q}$$

A $3t^2q^2\sqrt{11} + 6\sqrt{5q}$

B $5tq^4\sqrt{8} + 2\sqrt{7q^3} + \sqrt{5q^2}$

5 Simplify, then add or subtract the radical expressions

$$\sqrt{176z^3} - \sqrt{44z^3} + \sqrt{50rz^2}$$

A $3z^2\sqrt{7z} - z\sqrt{11z} + 6z^3\sqrt{5r}$

B $2z\sqrt{11z} + 5z\sqrt{2r}$

6 Simplify, then add or subtract the radical expressions

$$\sqrt{45z^3q^4} + \sqrt{175z^2q^3} + \sqrt{63z^2q^3}$$

A $zq\sqrt{8z} + zq\sqrt{10q} + 6zq\sqrt{9q^3}$

B $3zq^2\sqrt{5z} + 8zq\sqrt{7q}$

7 Simplify, then add or subtract the radical expressions

$$\sqrt{99p} + \sqrt{32x^4p} + \sqrt{32x^4p}$$

A $3\sqrt{11p} + 2x^2\sqrt{2p}$

B $3\sqrt{11p} + 8x^2\sqrt{2p}$

8 Simplify, then add or subtract the radical expressions

$$\sqrt[3]{54p^2q^4} + \sqrt[3]{192p^3q} + \sqrt[3]{128p^2q^4}$$

A $7q\sqrt[3]{2p^2q} + 4p\sqrt[3]{3q}$

B $6q\sqrt[3]{pq} + 4p^3\sqrt[3]{q} + 7q^3\sqrt[3]{pq}$